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SIEBEL, SAP PUSH CRM UPGRADES

Rivals battle for users with dueling releases

BY MARC L. SONGINI

Siebel Systems Inc. and SAP AG last week heated up the competition in the customer relationship management market by announcing upgrades of their rival application suites.

Siebel released a new version of its applications, dubbed Siebel 7.5, that comes with hundreds of built-in business processes tailored for users in 20 different vertical industries. For example, Siebel said a version of the software for retail banking will be able to automate the process of changing customer addresses and stopping payments on checks.

Siebel 7.5 is also the first release of the CRM software to include pieces of the company's Universal Application Network technology for developing integration links with other systems, said Ed Abbo, senior vice president of technology at Siebel.

Meanwhile, SAP detailed Version 3.1 of its mySAP CRM soft-

Siebel and SAP, page 61

LEGACY TIES WEIGH ON CRM PROJECT

Siebel user works to integrate new, old apps

BY LUCAS MEARIAN

Countrywide Credit Industries Inc., a $4 billion financial services firm, is embarking on a multiyear project to roll out Siebel Systems Inc.'s customer relationship management software across 20 divisions. But it faces a big challenge: integrating the new applications with existing ones that run on IBM AS/400s and mainframes.

The project began in July and is expected to take three to five years to complete, said Tony Vigna, vice president of CRM development at Calabasas, Calif.-based Countrywide. He declined to comment on the expected cost of the Siebel rollout and the application integration effort.

The planned installation of the Siebel 7 software is designed to give Countrywide a complete set of information about its customers through a single user interface, and vice versa. "We wanted a unified view of our customer, as well as giving our customer a unified view of us," Vigna said.

However, getting those unified views will require the use of integration tools developed by Seattle-based WRQ Inc. as a middleware layer between

Legacy Ties, page 61

JOHN BIELLO/IDG

A New Vigilance

SEPTEMBER 11

One year after the devastating attacks on the World Trade Center and the Pentagon, IT professionals are at the forefront of efforts to prevent the nightmare of a recurrence — and to be prepared if what used to be unthinkable happens again.

FULL COVERAGE OF ATTACK ON AMERICA

For access to all *Computerworld* stories on the Sept. 11 attacks and their aftermath, please visit our Web site:

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NEWS

An exclusive *Computerworld* survey of IT pros finds that better security awareness hasn't yielded huge changes in security investments; meanwhile, *change* is the watchword in critical infrastructure protection. STARTS ON PAGE 6.

TECHNOLOGY

Researchers at the National Lab in Los Alamos look for ways to enable IT to fight terrorism; corporations employ an array of tools and services to assess how vulnerable their systems are to cyberattack. STARTS ON PAGE 30.

MANAGEMENT

Companies add cyberattack exercises to their disaster-preparedness plans; experts offer tips for combing through IT service contracts to ensure you're covered in the event of a terrorist-related emergency. STARTS ON PAGE 44.

NEWSPAPER

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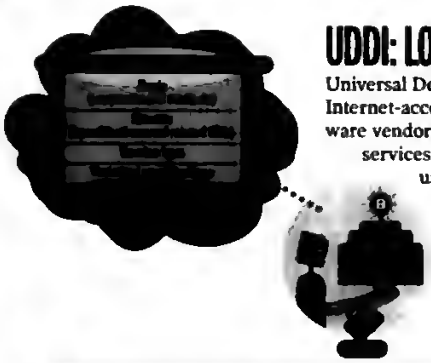

UDDI: LOOKING UP WEB SERVICES

Universal Description, Discovery and Integratioo is an Internet-accessible registry in which businesses, software vendors and programmers can describe the Web services they offer and provide links on how to use them. Find out more in this week's QuickStudy. **PAGE 40**

WE BELIEVE

In a world turned upside down by the events of Sept. 11, Frank Hayes reveals a solid core of beliefs that anchors all IT professionals to their work . . . and their world. **PAGE 62**

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COMPUTERWORLD THIS WEEK

NEWS 6

6-7 Our examination of the one-year anniversary of Sept. 11 starts with a survey that reveals that corporations still aren't adequately funding IT security. Also, we look at how corporate America has responded, and have a discussion with the White House's cybersecurity chief.

8 Sharing classified information presents critical challenges to the homeland security initiative.

12 An ROI survey says online training and e-business integratioo bring the biggest returns.

14 Microsoft ships its Multipath I/O storage management software.

25 Hershey's R/3 upgrade went a lot more smoothly than the initial installation back in 1999.

BREAKING NEWS

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29 IT researchers are looking to biology for more than superficial analogies — they're after real guidance, writes Gary H. Anthes.

30 Los Alamos National Laboratory is developing new ways to combat bioterrorist threats.

34 Assessing the vulnerability of their company's systems has become a crucial part of IT managers' jobs since Sept. 11, and they're using a variety of tools and services to get it done.

36 Fully converged SAN/NAS network storage is the key to overcoming the limitations of storage oetworking, says Network Appliance CTO Steven Kleiman.

38 Security Journal: Mathias Thurman finds that eliminating rogue wireless LAN (WLAN) access points is easier than creating policies and standards to secure WLAN infrastructure.

MANAGEMENT 43

43 Forget reading, writing and 'rithmetic — Bart Perkins says there are three new *R*s for supplier management. Here's how to put them to work to cut costs.

44 Corporations are adding cyberattack exercises to their disaster-preparedness tactics in the event of a terrorist assault on their infrastructure.

46 Beware of *force majeure* clauses in IT contracts. These typically vendor-controlled provisos, the definitions of which have been quietly expanding, can leave your firm in the lurch.

46 Despite flat IT budgets, companies are taking business continuity into their own hands.

50 William Ulrich explains io his new book how companies can incorporate in Web-based systems the critical data and functionality that's locked in their old applications.

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26 Maryfran Johnson examines the results of a *Computerworld.com* survey that polled readers on how their companies have responded to protect IT resources since the Sept. 11 attacks. Although she sees plenty of areas to improve, she continues to be impressed with IT's response.

26 Pimm Fox chats with the CIO at Kemper Casualty, who says eliminating paper became a key goal after the company lost two floors of offices in the World Trade Center.

27 Thornton May critiques the lack of critical thinking inside Dell. The PC maker's latest moves are uninspired, he says. May offers three suggestions that he says Michael Dell can take to the bank.

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ONLINE

ASK PERMISSION

The opt-in approach to data privacy will prevail as the global norm in laws and business practices, writes privacy columnist Jay Cline.
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LINUX & YOU

There are currently more than 100 ongoing discussions in our forums about Linux and what it really means for IT. Don't you have something to say?
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ONE YEAR AFTER

Has the government done enough to protect critical IT infrastructure? Has the private sector? Post your comments in our discussion forum.
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See our complete coverage of the Sept. 11 attack and how IT has responded.
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WHAT'S A QUICKLINK?

On some pages in this issue, you'll see a QuickLink code pointing to additional, related content on our Web site. Just enter that code into our QuickLink box online, which you'll see at the top of each page on our site.

Use QuickLinks to see related stories, discussion forums, research links, archives and more.

IT Watchfulness Rises, But Budgets Limit Change

Survey reveals new funds lacking to bolster data security

BY MARK HALL

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SEPTEMBER 11

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Nessl said his department is now taking "snapshots of the data twice a day to make sure we're no more than a half-day out of sync." The company also used previously budgeted dollars to buy mass storage technology from EMC Corp. that can mirror data to a remote site.

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Computerworld's *survey was conducted in collaboration with Perseus Development Corp., a market research firm in Braintree, Mass. (www.perseus.com).*

ADDITIONAL FINDINGS

More survey results can be found online.
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www.computerworld.com

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Attitudes about disaster preparedness and security are what changed the most after the terror attacks on the U.S. last year, according to many IT professionals.

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Jim O'Keefe, IT director at Resco Products Inc. in Pittsburgh, agreed. "Sept. 11 brought out how vulnerable everyone is," he said.

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Corporate America Now on Front Lines of War on Terror

BY DAN VERTON

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In that regard, Sept. 11, 2001, will be remembered as a colossal failure for international terrorism, say government and private-sector security experts.

Rather than leaving the country in a state of stunned inaction, the attacks triggered what many security experts say was long overdue: a nationwide effort to bolster homeland security and critical infrastructure protection — a concept that has placed private companies on the front lines of national defense.

"It's never been done before," said Steve Cooper, CIO at the White House's Office of Homeland Security, referring to the massive integration effort now under way to help improve security information sharing among government agencies and the hundreds of private companies that own and operate 90% of the nation's critical systems. "We must do it, and we can do it," said Cooper, speaking Aug. 19 at a government symposium on homeland security.

Perception Game

However, proponents of critical-infrastructure protection, particularly in the area of cybersecurity, face many of the same challenges that terrorism experts encountered prior to Sept. 11: Few in the private sector perceive that there's an imminent threat to the digital homeland, and fewer still acknowledge terrorists' ability to and willingness to adapt their tactics to take advantage of America's digital Achilles' heel — its information networks.

Every so-called critical infrastructure in the U.S., from telecommunications to transportation, banking and energy, relies on computers and computer networks, National Security Adviser Condoleezza Rice said in March last year during her first major policy address on the topic.

"Corrupt those networks, and you disrupt this nation," she said. "Today, the cyber-economy *is* the economy."

"The terrorists in the Sept. 11 event had the patience to plan [and] the foresight and the understanding of the infrastructure that could be used to simultaneously or sequentially disrupt the infrastructure electronically," said Paula Scalingi, former director of critical infrastructure protection at the U.S. Department of Energy. "That could cause a major regional failure in this country. There's no question that that's doable."

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Once the electric grid is disrupted, the other infrastructures that businesses and government agencies rely on for their day-to-day operations, including telecommunications, transportation, emergency services, hospitals and law enforcement, begin to fall like dominoes, according to the final report on the lessons learned from the exercise. ▶

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Can you briefly explain the cybersecurity threat for those who still may not be sure who or what the enemy is?

There's a spectrum of threats out there, some of which we experience every day. That spectrum runs from [individuals] who simply vandalize Web pages to those who conduct nuisance denial-of-service attacks. That's on the low end, which is usually conducted by young hackers — so-called script kiddies.

In the middle, you have criminals who conduct fraud and industrial espionage online. The middle range of threats is usually carried out by organized crime, companies and also nation-states.

On the high end, however, you face people who potentially could conduct attacks to destroy or stop things from working. At the high end, it's potentially nation-states or terrorist groups. These attacks could be conducted in isolation or in conjunction with a physical attack.

I think we have to anticipate that a smart opponent would use some of these asymmetric tactics against us. In the larger scenarios, the private sector would be the targets for attack, either by terrorist groups or nation-states, because those groups would seek to disrupt the national economy.

What are the greatest challenges facing the private sector in terms of cybersecurity, particularly with respect to your mission of building an effective public/private partnership that can provide for the common defense? The first problem we've always had was awareness. However, the awareness problem has diminished greatly for two reasons. People in boardrooms asked themselves after Sept. 11, "How secure is our company?" Also, there have been a lot of cyberattacks, which have doubled in the last year.

The second problem facing companies is determining what is a good product, who's a good service provider and what they should be asking for. Most people think the first thing to do is to run out and buy a firewall or an intrusion-detection system. But that doesn't even begin to solve your problems. You need to have a continuous process of looking for vulnerabilities, and you need to have a layered defense. We passed the 2,000 mark a few months ago in terms of known vulnerabilities that we have to deal with.

Are you satisfied with the effort expended to date at the regional infrastructure level by the various state and federal agencies and the private sector? I'm never satisfied. I'm feeling good about the federal government's own activities and that major sectors of the private sector are taking action.

For example, the banking and finance sector is doing a great deal, the electric power grid is for the first time thinking about encryption, and the IT sector itself is beginning to talk about quality software development and making security a design criteria. Companies like Oracle, Sun, Microsoft and Cisco are leading that effort. IT security is also a top issue in the private sector.

We also are looking for input from small and medium-size IT companies. A lot of good ideas are found in the garage, as HP discovered. We've proactively sought them out and met with them one on one. ▶

IN-DEPTH ONLINE

To read the full version of our interview with Critical Infrastructure Protection Board Chairman Richard Clarke, visit our Web site.
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www.computerworld.com

What Is Critical Infrastructure?

Facilities and IT systems that operate and manage daily services in the following sectors are considered part of the critical infrastructure:

- **Banking and finance**
- **Emergency services**
- **Energy**
- **Essential government services**
- **Health care**
- **Telecommunications**
- **Transportation**
- **Water systems**

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I think we have to anticipate that a smart opponent would use some of these asymmetric tactics against us. In the larger scenarios, the private sector would be the targets for attack, either by terrorist groups or nation-states, because those groups would seek to disrupt the national economy.

What are the greatest challenges facing the private sector in terms of cybersecurity, particularly with respect to your mission of building an effective public/private partnership that can provide for the common defense? The first problem we've always had was awareness. However, the awareness problem has diminished greatly for two reasons. People in boardrooms asked themselves after Sept. 11, "How secure is our company?" Also, there have been a lot of cyberattacks, which have doubled in the last year.

The second problem facing companies is determining what is a good product, who's a good service provider and what they should be asking for. Most people think the first thing to do is to run out and buy a firewall or an intrusion-detection system. But that doesn't even begin to solve your problems. You need to have a continuous process of looking for vulnerabilities, and you need to have a layered defense. We passed the 2,000 mark a few months ago in terms of known vulnerabilities that we have to deal with.

Are you satisfied with the effort expended to date at the regional infrastructure level by the various state and federal agencies and the private sector? I'm never satisfied. I'm feeling good about the federal government's own activities and that major sectors of the private sector are taking action.

For example, the banking and finance sector is doing a great deal, the electric power grid is for the first time thinking about encryption, and the IT sector itself is beginning to talk about quality software development and making security a design criteria. Companies like Oracle, Sun, Microsoft and Cisco are leading that effort. IT security is also a top issue in the private sector.

We also are looking for input from small and medium-size IT companies. A lot of good ideas are found in the garage, as HP discovered. We've proactively sought them out and met with them one on one. ▶

IN-DEPTH ONLINE

To read the full version of our interview with Critical Infrastructure Protection Board Chairman Richard Clarke, visit our Web site.

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www.computerworld.com

U.S. Intelligence Community Faces Info-Sharing Overhaul

Homeland security poses unprecedented data-sharing challenges for agencies

BY DAN VERTON

THE US intelligence community knows it has to improve the efficiency of its informatioo-sharing efforts. But the community's IT experts also know that massive change doesn't mean starting from scratch and giving everybody access to everything.

"We're trying to use the existing [IT] capabilities of the community," said Bill Dawson, the intelligence community's deputy CIO. That means leveraging the massive yet classified investment in IT systems and infrastructure that has taken place during the past decade, said Dawson and other top intelligence officials. Dawson's post lies within the CIA director's community management staff, which has oversight responsibilities for all 14 agencies that make up the U.S. intelligence community.

SEPTEMBER 11 IT Responds

But bomeland security information sharing poses unique security challenges that few people outside the intelligence community appreciate, Dawsoo said. For example, intelligence agencies are for the first time being asked to share information collected from highly sensitive sourees with agencies that sit outside of the traditional boundaries of the intelligence community, such as the Environmental Protection Agency (EPA) and the Department of Agriculture, according to Dawson.

"You really shouldn't have EPA officials surfing through military order-of-battle information," said Dawson. "I can run a wire and give you information, but what do you want, what do you need, and what are you going to do with it?"

Those are questions senior intelligence officials are grappling with as they anticipate the likely creation of a Department of Homeland Security, which will need access to highly compartmented intelligence data. And despite high-profile data-sharing failures in the past few years — Sept. 11 being the worst — a master architecture plan has been in the works and is now getting the attentioo it deserves.

The centerpiece of that plan is the Iotelligence Community System for Ioformation Sharing (ICSIS). It's a Web-based system that comprises both the Top Secret Joint Worldwide Intelligence Communications System and the Secret Ioternet Protocol Routing Network, which the defense and intelligence communities have been using for years to share data. The difference now is that Dawson and others are working to build a browser-based front end that won't take users directly to these systems but rather to a role-based common virtual collaboratioo space.

Sharing Secrets

ICSIS will provide the controlled interfaces that will for the first time let the intelligence community automate the process of stripping out from classified documents top-secret sources and methods of intelligence collection. It will also automate the sharing of that intelligence with analysts and officials with "Secret" or lower security clearances.

Phase 1 of ICSIS development, which is now under way, involves various collaboration "enablers," such as public-key infrastructure encryption technology; a directory of intelligence analysts who can be contacted by means of encrypted community e-mail; a collaboration software tool sulte; trusted interfaces for access to replicated data repositories at different security levels; and a metadata markup process to support data discovery.

John Brantley, director of the Intelink Management Office (see box), said there will be managed entry points into segregated communities of interest for all security levels. One of those entry points will lead to the Open Source Information System, a collaborative, virtual private network (VPN)-enabled workspace for sharing sensitive but unclassified data and opeo-source news reports from around the world. That's a capability critics have said the U.S. intelligence community has both lacked and ignored. There's even talk of creating a VPN link from the intelligence community to the Regional Information Sharing System Network, a state and local criminal intelligence database.

In the end, there's no silver bullet, Dawson said. "Databases will always be a challenge," he said. More important, he added, people should understand that "we don't have some magical box out there that we're not telling them about."

'Searching Intelink Is Like Shooting Craps'

The foundation of ICSIS is an intranet called Intelink, the first classified intelligence community intranet, which was set up in 1994.

"What we're really doing now is going beyond the wonderful baseline we have with Intelink," said Dolly Greenwood, director of architecture for ICSIS.

And while Intelink remains "the basis for how people share information" in the intelligence community, according to John Brantley, director of the Intelink Management Office, there are significant changes on the way for the intranet. One such change is the development of a structured database to help make sense of the 2.4 million Web pages that currently populate the top-secret version of Intelink.

"Searching Intelink is like shooting craps," said Stephen Selwyn, director of knowledge management at the Office of the Intelligence Community CIO. However, Selwyn's office plans to deploy by November what he calls a browser-based "intelligence community collaborative presence," letting intelligence analysts enter collaborative communities of interest from their desktops without needing other infrastructure.

– *Dan Verton*

AN INTRANET FOR SHARING

The State Department wants to expand the intelligence community's intranet to all of its 257 posts worldwide.

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Armed with GIS technology, NIMA is providing critical geospatial intelligence.

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Technology Aids Hunt For Terrorists

BY DAN VERTON

Analysts and field operatives from the CIA and the National Security Agency (NSA) have stepped up offensive operations against terrorists around the world using sophisticated text and audio search and analysis technologies.

"We've increased the number of teams around the world collecting information and disrupting [terrorist] activities," acknowledged Philip Lago, executive secretary of the CIA. "The tempo of that activity has increased dramatically."

Those operations have also increased the volume of raw technical intelligence – phone, radio and video recordings as well as text – flowing into the headquarters of the CIA and NSA in Langley, Va., and Fort Meade, Md., respectively. The result: a dramatic upswing in demand for technology to help ensure that analysts don't miss critical communications or code words that could be used to launch an attack.

One of those technologies is the Name Reference Library from Language Analysis Systems Inc. (LAS) in Herndon, Va. The software analyzes name origins, tells the user whether or not multiple middle and last names are in the right order (Egyptian- and Saudi-born citizens often use multiple generational names), and provides a list of the top 10 spelling variants as well as gender associations.

LAS is working on a product that will enable processing of native scripts, said Jack Hermansen, the firm's president. "If you can capture Mohamed in Arabic, for example, it's only spelled one way. The problem is in the transcription to other languages," he said. LAS plans to complete development work on the new version in the next six months.

Meanwhile, NSA analysts, who are responsible for intercepting and analyzing hundreds of terabytes of archived and real-time voice, data and video communications, are getting help from Fast Talk Communications Inc.

Fast Talk President Armistad Whitney said the company's software can break down speech to its smallest components, called phonemes. The phonemes can then be indexed and searched for keywords. The software can retrieve any word, name or phrase from voice data, regardless of speaker or dialect, with up to 98% accuracy and up to 72,000 times faster than in real time, company officials said. Analysts can therefore search through 20 hours of audio in less than 1 second.

The company signed two contracts with the intelligence community within the past 90 days. Currently in the deployment phase, the software is being loaded on laptop computers for use in the field and on multiprocessor enterprise systems at agency headquarters, Whitney said.

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SEPTEMBER 11

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AT DEADLINE

Oracle to Cut 270 U.K. Consulting Jobs

Oracle Corp. said it plans to cut about 270 IT consulting jobs in the U.K., although the software vendor said it will try to redeploy some of the workers into different positions. Oracle, which has about 3,100 employees in the U.K., said it's a "constantly evaluating business-critical staffing allocations" as part of an effort to consolidate operations and increase technical efficiencies.

BEA Readies JVM Software Upgrade

San Jose-based BEA Systems Inc. today plans to release a new version of its Java virtual machine (JVM) software for Intel-based servers. BEA said WebLogic JRockit 7.0 includes support for running Java applications on systems built around Intel Corp.'s Xeon and Itanium chips. The software also supports interoperability across the hardware platforms of various server vendors.

HP Unit to Focus on Internal, External IT

Hewlett-Packard Co. said it has created a new group within its professional services unit to design and implement internal IT plans and to advise the company's customers on technology strategies. The group will report jointly to HP CIO Bob Napier and to an executive within the IT services unit.

CA Ordered to Pay For Buyout Violations

A U.S. appeals court in New York ruled that Computer Associates International Inc. has to pay $10.3 million to former shareholders of a software vendor it bought in 1981. The court upheld a jury's decision, issued in September 2000, that CA paid more for the stock of On-Line Software International Inc.'s CEO than it paid to other shareholders.

HP Trims Cost, Features In New Unix Server Line

Preconfigured systems emphasize price over power for users with tight budgets

BY JAIKUMAR VIJAYAN AND TODD WEISS

HEWLETT-PACKARD Co. last week introduced a line of preconfigured Unix servers, and analysts said the new systems could appeal to users who are willing to sacrifice some performance and flexibility to get a good price.

HP's 05 Series server line features three models that are based oo the company's 650-MHz PA-RISC processor and run its HP-UX 11i operating system. The servers are available only in preconfigured, standardized models, ranging from a one-processor model to an eight-processor system.

Starting prices range from $4,795 for a one-processor version of the entry-level RP2405 system with 512MB of memory and 26GB of disk storage to $50,595 for the RP7405 model with two CPUs, 4GB of memory and 146GB of storage.

John Miller, the worldwide server marketing manager at HP's Business Critical Systems Group, said the new line targets users that have tight IT budgets but still need increased processing capacity.

Io the past, Miller said, IT managers have ranked performance, manageability and reliability above cost when looking to purchase servers. But in the current sluggish economy, cost has risen in importance, leading HP to introduce servers that tout low price over cutting-edge technologies, he said.

Good Enough

Eileen Gibson, a vice president at Avnet Hall-Mark Inc., a computer reseller in Tempe, Ariz., agreed with the strategy. Rather thao wait for better economic conditioos, users might prefer to go with "good technology, eveo if it may not be bleeding-edge," she said.

The systems make sense for users that don't mind giving up a little in return for a good price, said Rich Partridge, an analyst at D.H. Brown Associates Inc. io Port Chester, N.Y.

"The ecooomy has forced many customers to be very price-sensitive," Partridge said. "I don't think users are going to find a fixed, preconfigured set of attributes to be that much of a detriment if they can get a lower-priced server.

"It's like being willing to do the Saturday night stay-over if you can save some money oo the trip," he added.

And it isn't as though HP's new economy servers are notably inferior to its regular models, said Joyce Becknell, an analyst at The Sageza Group Inc. in Mountain View, Calif.

The machines feature many of the same functions found on HP's higher-eod Superdome servers, including dynamic partitioning, workload management and fault monitoring.

In addition, the systems are upgradable to newer processors, including Intel Corp.'s 64-bit Itanium chips, so users can boost performance whenever they want, Becknell said.

"What [HP has] done is to try and keep the functionality while getting the costs down, by offering standard configurations," Becknell said.

Standard configurations are also easier for salespeople to sell and for users to understand, she added. ▶

Low-cost Unix Systems

HP's new 05 Series features three models:

RP2405 CAN HANDLE UP TO:
- Two processors
- 8GB of memory
- 146GB internal disk capacity

RP5404 SUPPORTS UP TO:
- Four processors
- 16GB of memory
- 292GB of internal disk capacity

RP7405 RUNS WITH UP TO:
- Eight processors
- 16GB of memory
- Two hardware partitions
- Eight virtual partitions
- 292GB of internal disk capacity

Corrections

The story "CPUs Cut the Power" on page 30 of our Sept. 2 issue incorrectly stated the lower end of the power consumption for the Intel Banias microprocessor. The correct figure is 360 milliwatts.

The story "Filing It Away" on page 34 in the Sept. 2 issue included incorrect information about the file systems supported by Microsoft Corp.'s Windows NT. The native file format for Windows NT is NTFS. While it can also use FAT16 file systems, FAT32 file systems can only be set up under Windows NT using third-party utilities.

Server Sales Sink Deeper

Revenues weaker amid market shuffling

BY JAIKUMAR VIJAYAN

Worldwide server reveoues declined for the sixth quarter in a row to $10.5 billion in the second quarter, down 17% from $12.6 billioo in the same period last year, according to IDC in Framingham, Mass.

Weak sales in Japan and Europe added to revenue declines of 11% in the U.S. and 7% in the Asia-Pacific region, excluding Japan, IDC said, although it added that those decreases were smaller than expected.

Despite the softness in the second quarter, year-over-year sales for the remainder of 2002 should be near flat, the market research firm said.

The second quarter also marked the first time that IBM's position as worldwide server market leader was challeoged by another vendor. HP, in its first quarter after merging with Compaq Computer Corp., drew even with IBM in overall server revenue, with each company garnering a 28.7% market share, IDC said.

But HP lost market share overall, when current revenue is compared with the combined revenue of HP and Compaq last year for the same period, IDC said. It added that on a sequential basis, HP rivals IBM, Suo Microsystems Inc. and Dell Compuer Corp. all saw an increase in revenue from the first quarter of this year to the second, even though the overall server market declined 3% from quarter to quarter.

Gartner Inc.'s Dataquest unit in San Jose also reported a double-digit decline in second-quarter server revenue. It announced thai sales dropped 13% year-over-year, from $11.6 billion to $10.1 billion. ▶

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Online Training, E-Business Integration Yield Big Returns

ROI study says CRM implementations among toughest for achieving payback

BY THOMAS HOFFMAN

ONLINE LEARNING and e-business integration projects are delivering the strongest returns on investment for companies, while customer relationship management (CRM), content management and online marketplace efforts are at the bottom of the list.

Those findings are part of an assessment of thousands of IT ROI studies that Wellesley, Mass.-based Nucleus Research Inc. has done for users such as Aetna Inc., Pfizer Inc., British Telecommunications PLC and Lockheed Martin Corp.

For instance, according to Nucleus, companies that implement online training systems for a "modest" five- or six-figure investment typically generate strong financial returns through cost reductions in areas such as travel, human resources overhead, regulatory compliance and customer support.

Ian Campbell, co-founder and principal analyst at the research firm, said e-business integration software such as Microsoft Corp.'s BizTalk Server and BEA Systems Inc.'s WebLogic Integration have helped companies leverage existing investments in their IT infrastructures through both internal links and business-to-business connections.

Many of the returns from such projects result from a streamlining of data flows between applications and access to a broader set of information for end users, according to the Nucleus assessment, which is due to be released this week.

"I could see where e-business integration would offer strong results, because you're streamlining operations and taking out redundancies," said Steve McDowell, information services director at a retirement home operator in the Pacific Northwest. He asked that the company not be identified.

On the other end of the scale, CRM projects typically fall short of ROI projections, Campbell said. Companies often overbuy the amount of CRM applications they need, he said. And business requirements often change by the time multiyear CRM implementations are completed, he added.

The CRM findings jibe with the experiences of Rick Peltz, CIO at Marcus & Millichap Real Estate Investment Brokerage Co. in Encino, Calif., but for different reasons than the ones cited by Campbell. Peltz said he has witnessed the shortcomings of CRM systems at both Marcus & Millichap and Bank of America Corp.

Six years ago, when Peltz was working in IT at Bank of America prior to its merger with NationsBank, the company deployed a CRM system aimed at sharing client information throughout its North American wholesale banking division. However, Peltz said, the system "went belly up" eight months after going live. "No one used it," he said. "When you're dealing with salespeople and agents, their client list is their lifeline."

That also helps explain why Marcus & Millichap's 650 agents have resisted overtures made by Peltz and his team to install a nationwide CRM system for sharing information about their clients, he said.

Many stand-alone content management systems also fail to generate strong returns, according to the Nucleus report. Content portals and applications that are narrowly focused and tightly integrated with other systems are more likely to yield returns, Campbell said.

For Jim Albin, CIO at Mercy Health Partners of Western Toledo in Ohio, any content management project has to be focused on business processes.

"The things that alter workflows and improve the process downstream are the true ROI generators," not the technology itself, he said.

ROI Leaders And Laggards

THE TOP PERFORMERS
E-business integration tools: Can reduce costs, increase corporate performance and, ultimately, generate new revenue streams.

E-learning systems: Benefits include reduced costs and operational improvements such as increases in productivity.

LESS SUCCESSFUL
Business-to-business marketplaces: Have produced limited returns; companies would have been better off integrating systems with those of key business partners.

Monolithic CRM systems: Consulting and software costs can outweigh financial returns, and a long deployment process often slows payback.

Stand-alone content management tools: Improved functionality in Web server and portal software reduces the financial appeal of stand-alone products.

SOURCE: NUCLEUS RESEARCH INC., WELLESLEY, MASS.

PAYBACK TIME

For more on IT return-on-investment issues, go to our ROI Knowledge Center

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www.computerworld.com

IBM Expands Identity Management Tools

Acquisition adds to Tivoli software line

BY JAIKUMAR VIJAYAN

IBM's planned purchase of software vendor Access360 should significantly improve the security capabilities of its Tivoli product line and potentially change the character of the identity management market, according to analysts.

IBM last week said it plans to buy Irvine, Calif.-based Access360, which develops identity management software, for an undisclosed price.

Upon regulatory approval of the deal, which is expected next month, privately held Access360 will join IBM's $13 billion software group. Its products will become part of the Tivoli portfolio, IBM's line of IT management software.

Access360's software and services are aimed at helping large companies automate the process of granting, modifying or revoking user access rights to various applications based on roles or other policies.

The deal brings new workflow and self-service capabilities to IBM's aging Tivoli identity manager technology, said Chris King, an analyst at Meta Group Inc. in Stamford, Conn.

"IBM knows this is a hot market, but the products that it's had have been trailing for quite some time," King said.

For example, Tivoli's identity management software works only within the Tivoli framework, which makes it less flexible than many rival technologies, he said. By purchasing Access360, IBM will get some of the best technology in this market, King said.

IBM's acquisition comes at a time when demand for identity management software seems to be growing. Framingham, Mass.-based research firm IDC predicts that sales of security management software, which includes identity management, will grow 30% annually, from $550 million in 2001 to $2 billion in 2006.

Driving much of the demand is the growing need within corporations to manage user identities in an easier and more cost-efficient manner, said James Governor, an analyst at Illuminata Inc. in Nashua, N.H.

Currently, a wide variety of point products is available to help address different parts of the identity management problem. Companies such as Netegrity Inc. in Waltham, Mass., sell Web access control software. Directory management technologies are available from vendors including Oblix Inc. in Cupertino, Calif., while companies such as Courion Corp. in Framingham have developed password reset and user management technologies.

"What you have is a common pain point with incredibly varied solutions," said Pete Lindstrom, an analyst at Hurwitz Group Inc., in Framingham. But that may change, he added, as more vendors offer integrated identity-management suites like the one IBM is attempting to gain with its purchase of Access360.

New Identity

What Access360 brings to IBM's Tivoli portfolio:

ENROLE: Software that centralizes control over user access rights based on policies and user roles.

PUBLIC PROVISIONING INFRASTRUCTURE: A hosted identity management service delivered jointly with VeriSign Inc.

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Acquisition adds to Tivoli software line

BY JAIKUMAR VIJAYAN

IBM's planned purchase of software vendor Access360 should significantly improve the security capabilities of its Tivoli product line and potentially change the character of the identity management market, according to analysts.

IBM last week said it plans to buy Irvine, Calif.-based Access360, which develops identity management software, for an undisclosed price.

Upon regulatory approval of the deal, which is expected next month, privately held Access360 will join IBM's $13 billion software group. Its products will become part of the Tivoli portfolio, IBM's line of IT management software.

Access360's software and services are aimed at helping large companies automate the process of granting, modifying or revoking user access rights to various applications based on roles or other policies.

The deal brings new workflow and self-service capabilities to IBM's aging Tivoli identity manager technology, said Chris King, an analyst at Meta Group Inc. in Stamford, Conn.

"IBM knows this is a hot market, but the products that it's had have been trailing for quite some time," King said.

For example, Tivoli's identity management software works only within the Tivoli framework, which makes it less flexible than many rival technologies, he said. By purchasing Access360, IBM will get some of the best technology in this market, King said.

IBM's acquisition comes at a time when demand for identity management software seems to be growing. Framingham, Mass.-based research firm IDC predicts that sales of security management software, which includes identity management, will grow 30% annually, from $550 million in 2001 to $2 billion in 2006.

Driving much of the demand is the growing need within corporations to manage user identities in an easier and more cost-efficient manner, said James Governor, an analyst at Illuminata Inc. in Nashua, N.H.

Currently, a wide variety of point products is available to help address different parts of the identity management problem. Companies such as Netegrity Inc. in Waltham, Mass., sell Web access control software. Directory management technologies are available from vendors including Oblix Inc. in Cupertino, Calif., while companies such as Courion Corp. in Framingham have developed password reset and user management technologies.

"What you have is a common pain point with incredibly varied solutions," said Pete Lindstrom, an analyst at Hurwitz Group Inc., in Framingham. But that may change, he added, as more vendors offer integrated identity-management suites like the one IBM is attempting to gain with its purchase of Access360.

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BRIEFS

Microsoft Warns of Windows, Mac Holes

Microsoft Corp. has begun releasing a series of software patches designed to plug a security hole in all of its current Windows releases that could let attackers issue bogus digital certificates. The flaw also affects the Macintosh versions of Office, Internet Explorer and Outlook Express. Microsoft gave the vulnerability its highest severity rating and urged IT managers to install the patches as soon as possible.

Cisco Finds Security Flaws in VPN Tools

Cisco Systems Inc. issued a pair of security advisories warning users about multiple vulnerabilities in its VPN 3000 line of virtual private network (VPN) concentrators and its VPN Client software. Cisco said it has released updated versions of the products that address the flaws. It also detailed work-arounds that can mitigate some of the problems.

Intel Sells Off Network Management Tools

Intel Corp. said it has agreed to spin off its LANDesk line of network management tools into a new company that will be funded mainly by two venture capital firms. Intel plans to keep a minority ownership stake in the LANDesk business, which will be based in the Salt Lake City area. Intel also lowered its third-quarter revenue forecast slightly, citing weak microprocessor sales.

Short Takes

NOVELL INC. announced that it has cut the cost of licensing fees for companies and government agencies that use its software to offer Internet-based services to consumers. . . . HEWLETT-PACKARD CO. released new processors and an operating system update for its HP e3000 server line, which is due to be discontinued in October 2003.

Utility-based Deal Cuts Tennis Group's IT Costs

IBM ties U.S. Open Web site service fees to daily usage

BY THOMAS HOFFMAN
FLUSHING MEADOW N.Y.

AT THIS YEAR'S U.S. Open tennis tournament here, the organization that governs the sport in the U.S. tried to ace out high IT costs by joining the burgeoning move toward utility-based computing.

The United States Tennis Association (USTA) structured a utility-based contract with IBM to cover the operation of its *www.usopen.org* Web site during the tournament, which was scheduled to conclude yesterday. Under the contract, the USTA will pay IBM for Web hosting, content caching and Web-site performance measurement services based on its average utilization over a 24-hour period.

The deal was set up to help the USTA handle surges in Web site traffic at a reasonable cost level, said Ezra Kucharz, managing director of advanced media at the White Plains, N.Y.-based USTA. The association typically has to increase its online capacity 50-fold to meet the demand for information during the two-week tournament, according to Kucharz.

Cost-Effective Model

Switching to the utility-based approach was "definitely a more cost-effective model for us," he said. "It wouldn't make sense for us to invest in [new technology for] a two-week event on an annual basis."

IBM and the USTA didn't disclose the financial details of the contract. Dev Mukherjee, vice president of strategy and marketing for IBM's E-Business Services on Demand group, said only that the deal was "a customized agreement."

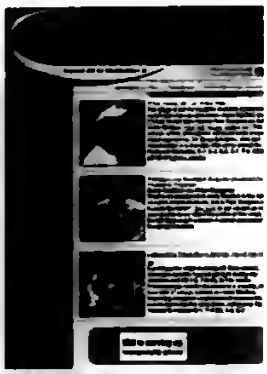
But utility-based computing isn't just restricted to niche applications such as annual sporting events. For example, IBM also provides computing-on-demand services to large corporate users such as American Express Co., Saks Inc. and The Dow Chemical Co.

In the seven-year, $4 billion outsourcing and IT services agreement it signed with New York-based Amex in February, IBM is supplying mainframes, storage and other processing resources, as well as technical support, on an as-needed basis [QuickLink 27619].

IBM rivals such as Plano, Texas-based Electronic Data Systems Corp. are also offering pay-as-you-go approaches to IT services. Utility-based computing "might be in its infancy, but it makes a great deal of sense," said Jeremy Grigg, a Gartner Inc. analyst who works in New York. That could lead to "a significant transformation in the delivery of commodity services in the future," Grigg added.

In the case of the USTA, IBM has managed the U.S. Open's Web site and scoring system for the past seven years. The USTA runs its own Web servers 11 months per year, but it turns them over to IBM just prior to the tournament, said IBM executive Edward Curry.

IBM moves portions of the USTA's content-serving workload onto its Intel-based Netfinity servers, which cache the information at peripheral network points to enable efficient content processing. During peak demand times, load balancing between distributed IBM RS/6000 SP servers and Intel-based xSeries boxes running Linux helps partition processing requests, IBM said.



The USTA's pay-as-you-go pact makes handling traffic spikes to its Web site more cost-effective.

Kucharz wouldn't quantify the amount of traffic the Web site was experiencing for this year's tournament, but he said it was up from last year, when the site had nearly 11 million user visits and served more than 172 million pages of information. ▶

Microsoft Plans Storage Management Software

Multipath I/O links servers to disk arrays

BY LUCAS MEARIAN

Microsoft Corp. last week announced storage management software that will let systems running Windows 2000 Server and Windows .Net Server 2003 communicate with storage arrays across multiple devices supported by more than a dozen leading vendors.

Microsoft's Multipath I/O technology will ship as a device development kit to third-party partners such as EMC Corp., Hitachi Ltd., Hewlett-Packard Co., Network Appliance Inc. and Veritas Software Corp. Microsoft said the technology allows more than one physical path to be used to access storage devices, providing improved system reliability via fault tolerance and load balancing of I/O traffic.

Multipath I/O is due to ship by year's end with both Windows 2000 and Windows .Net Server 2003, which is scheduled for release then as well.

Anders Lofgren, an analyst at Giga Information Group Inc. in Cambridge, Mass., said Microsoft's venture into storage software is a welcome development.

"It should ease integration issues in terms of providing high availability and functionality through multipathing for Windows environments," Lofgren said. "Anything that can be done to improve in that area is a good thing."

More than a dozen vendors have committed to developing products that will use Multipath I/O to deliver capabilities such as fail-over, load balancing and interoperability with third-party storage products such as host bus adapters and RAID arrays, Microsoft said.

Rakesh Narasimhan, general manager of strategic partnerships at Microsoft, said storage vendors that use the technology can expose the different behaviors of their hardware through an application programming interface and deliver the I/O software through it.

"It's a standards and interoperability path between them and us. On Windows, we can guarantee a level of service with their products," he said.

However, others criticized the software because it works only with Microsoft's operating systems.

"It's a wonderful start as they try to get into storage big time, but they have some challeoges because ... it doesn't address the non-Windows platforms," said Bob Zimmerman, an analyst at Giga. "No one's a true-blue IBM shop or Microsoft shop anymore." ▶

MORE THIS ISSUE

For more about storage management, see related story on page 21.

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Muted NetWorld+Interop Lacks Major Rollouts

Networking industry downturn, Sept. 11 anniversary weigh on trade show

BY MATT HAMBLEN

THE NETWORLD+Interop Atlanta 2002 trade show is scheduled to open today amid lingering worries about the financial health of the networking industry and some jitters about physical security issues during the first anniversary of the Sept. 11 terrorist attacks.

The crowds and the number of exhibitors' booths will be down from previous fall N+I shows, vendors and conference sponsors said last week. But, they added, the attendees who do show up are expected to be qualified IT executives who control their companies' spending budgets, rather than lower-level IT workers.

"My hope is for a strong regional attendance and not embarrassingly small crowds, but I think conference attendance generally is going to start drifting back up" after more than a year of declines at various events, said Craig Mathias, an analyst at Farpoint Group in Ashland, Mass., and a scheduled N+I speaker.

The hottest areas of emphasis will be network security and wireless networking, said show organizers. However, few of the big-name networking vendors plan to announce major new products at N+I.

For example, Cisco Systems Inc. won't have a corporate presence at the conference; instead, its booth will be limited to its businesses in the Atlanta region, and a spokesman said the company won't introduce any products or services.

Computer Associates International Inc. is among the 200 or so N+I exhibitors. Although the company was listed by show sponsor NetWorld+Interop Worldwide as planning to unveil several products, a spokeswoman for Islandia, N.Y.-based CA said that isn't the case.

AT A GLANCE

N+I Atlanta 2002 Details

Expected attendance: 20,000 to 30,000 attendees and 200 exhibitors

Major technology themes: Security, wireless networks, voice over IP technology, storage

Keynotes speakers (all on Tuesday): Ronald LeMay, president of Sprint Corp., Bobby Johnson, president and CEO of Foundry Networks Inc., Robert Shaner, president of Cingular Wireless

Meanwhile, struggling vendors such as Lucent Technologies Inc. in Murray Hill, N.J., and Nortel Networks Ltd. in Brampton, Ontario, are sending only speakers to the conference. A Nortel spokesman said the company tends to emphasize the spring N+I show in Las Vegas.

Sprint Corp. is one of the few major telecommunications carriers scheduled to have a booth at this week's event. In recent years, the fall N+I show has been a good place to meet enterprise IT buyers, said Barry Tishart, director of data product management at Sprint, which will demonstrate some IP-based network services that it unveiled earlier this year. But the likely turnout at this week's conference "is a million-dollar question," Tishart added.

Valerie Williamson, president of Foster City, Calif.-based NetWorld+Interop Worldwide, a subsidiary of Key3Media Group Inc. in Los Angeles, said she expects 20,000 to 30,000 people to attend the conference. Last year's Atlanta show opened on Sept. 11 and drew a total of about 20,000 attendees.

A special Comdex Atlanta is being combined with N+I this year in an attempt to bring in developers and IT executives beyond the usual network managers, Williamson said. Comdex Fall will be held in Las Vegas in November.

Evan Sohn, vice president of marketing at ReefEdge Inc. in Fort Lee, N.J., said the company plans to staff a booth at the show and announce wireless LAN management software (see story at right). "No doubt 9/11 will impact attendance, but it's still worth going for us to generate business, have one-on-one meetings and support our partners," Sohn said.

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Some Vendors Plan N+I Announcements

Even though many vendors are worried that NetWorld+Interop Atlanta 2002 might be light on attendees, the following networking equipment makers and network operators plan to announce products and services at the conference:

- In conjunction with Boulder, Colo.-based SpectraLink Corp., Fort Lee, N.J.-based ReefEdge Inc. plans to introduce Version 3.0 of its ReefEdge Connect system for security and management of wireless LANs. The upgrade will add support for managing SpectraLink's line of 802.11b-based wireless phones, ReefEdge said.
- Holtsville, N.Y.-based Symbol Technologies Inc. will formally announce its Mobius WLAN architecture, which puts wireless LAN security and management capabilities on a central switch instead of on individual wireless access points [QuickLink 32531].
- Proxim Corp. in Sunnyvale, Calif., will demonstrate a $249 kit it announced last week to upgrade 802.11b wireless networks to include support for the newer and faster 802.11a technology.

Proxim also unveiled Tsunami QuickBridge, an outdoor wireless bridge that uses the 5.8-GHz band to connect two buildings up to six miles apart as a quick replacement for a T1 or leased line. Tsunami models range in price from $3,500 to $5,500.

- Amsterdam-based Equant NV said it will announce a managed service that provides data, voice and video capabilities on IP-based VPNs.

Equant won't have a booth at NetWorld+Interop, but it will meet with attendees to detail its global service, which uses IP ports on Cisco routers to segregate data, voice and video traffic from one another. Equant officials said they have signed up 10 companies to use the service, but they wouldn't identify any of them.

– *Matt Hamblen*

WorldCom Broadens Its VPN Services

Adds support for Cisco routers

BY MATT HAMBLEN

WorldCom Inc. last week announced a series of additions to its global virtual private network (VPN) offerings, including an IP-based VPN service that uses routers made by Cisco Systems Inc.

The new capabilities include a service that provides access to frame-relay networks via WorldCom's IP-based UUnet network, plus Ethernet and Digital Subscriber Line (DSL) access options for VPN users.

Such services were designed to widen the VPN choices available to the struggling company's customers, said Jim DeMerlis, vice president of product management at WorldCom. "There is no such thing as a one-size-fits-all VPN," DeMerlis said.

Service Expansion

The Cisco-based IP VPN is available immediately in the U.S. for a monthly fee of $1,895 per site for a T1 link. WorldCom has been offering an IP VPN service that uses routers made by Lucent Technologies Inc. for the past three years. But DeMerlis said the Cisco technology should expand the service into more applications.

Daniel Mittler, director of technology and systems at Realm Business Solutions Inc., said the developer of applications for real estate agents has been using WorldCom's IP VPN service on Lucent routers since March. Using the VPN instead of frame-relay connections lowered Realm's monthly network costs from $45,000 to $12,000, according to Mittler.

Mittler said it might make sense for Realm to switch to the Cisco routers, since Realm is primarily a Cisco shop. But he said there's no urgent need to change the VPN at the company, which is moving its headquarters from New York to Dallas at the end of next month.

Mittler said he's pleased with WorldCom's service levels, despite the network operator's financial difficulties and Chapter 11 bankruptcy protection filing. "They won't turn down the lights," he said.

Realm used the former Exodus Communications Inc. as a network service provider until that company filed for bankruptcy protection last fall and sold most of its assets to Cable & Wireless PLC. Although WorldCom has also filed for Chapter 11, Mittler said his experience with the events at Exodus has made him less anxious because Realm wasn't hit by any service disruptions before changing carriers.

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Dell Installs Big Cluster of Servers, Looks at Web Sales

Online ordering of supercomputer-class systems envisioned, but plans aren't set

BY BOB BREWIN

DELL COMPUTER Corp. last week announced the installation of the aecood-largest server cluster sold to date under a high-performance computing initiative it launched in February. And Dell executives said users will eventually be able to order such systems via the company's Web site.

The Linux-based cluster bought for the State University of New York's Buffalo campus includes about 2,000 of Dell's PowerEdge servers, with a combined total of more than 4,000 Intel processors. The system, valued at $13 millioo to $14 million, is supported by a storage-area network with more than 16TB of disk storage (see box).

The clustered supercomputer can process up to 5.7 trillion floating-point operations per second and was designed for use in bioinformatics research at the Buffalo campus, including an analysis of what the proteins in different parts of the human genome do.

Thus far, the system installed at the school — known officially as the University at Buffalo — is surpassed only by a cluster that Dell sold to Paris-based Compagnie Generale de Geophysique for analyzing seismic data as part of oil exploration activities [QuickLink 30360]. That cluster was recently updated to include 4,096 processors, Dell said.

A Stretch for Dell?

Such high-performance clusters are seemingly far removed from the desktops, laptops and low-end servers for which Dell is best known. But Reza Rooholamini, Dell's director of operating systems and clusters, said the day will come when the server clusters can be ordered via the Web.

Rooholamini didn't say when that is likely to happen and conceded that a cluster "is more complex from an ordering standpoint thao a ootebook PC." But, he said, "it basically uses the same piece parts as our servers. We are just taking these parts and building blocks and connecting them into a supercomputer."

BOXES AND BOXES
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Michael Dell, the company's chairman and CEO, made a aimilar point during an interview last month [QuickLink 32329]. He said he doesn't view the clusters as being much different from other products. "All technology over time commoditizes at its simplest level," Dell said.

Mark Melenovsky, an analyst at Framingham, Mass.-based IDC, called the sale of large-scale cluster computers "the only bright spot in the server market" this year. IDC reported two weeks ago that total worldwide server sales fell by 17% year to year in the second quarter. But Melenovsky said he has seen a boom in the sale of large clusters with hundreds or thousands of oodes.

Nonetheless, he added that it's "a bit of a stretch" for Dell to believe it can take its build-to-order model to the supercomputer level. Melenovsky instead predicted the growth of a boutique services industry to help users handle the complex ordering and installation of large clusters.

A apokeswoman for Dell wouldn't specify bow many large clusters the company haa sold this year. But she said Dell has installed "hundreds of clusters" altogether, including at least 16 systems that each have more than 100 server nodes.

Jeffrey Skolnick, director of the Buffalo Center of Excellence in Bioinformatics at the university, said his team of researchers will use the cluster installed on the Buffalo campus to conduct research work that could eventually lead to the development of drugs for combating cancer, Alzheimer's disease and AIDS.

Big Cluster On Campus

The Dell server cluster installed by the University at Buffalo includes the following technologies:

- More than 2,000 Dell PowerEdge 2650 and PowerEdge 1650 servers, equipped with more than 4,000 Intel chips
- Red Hat's Linux and Platform Computing's LSF 5 cluster workload management software
- A 16TB storage-area network built around EMC storage devices and Extreme Networks' Black Diamond I/O switches

Oracle Releases Software Licensing Guide for Users

Pulls together info on its pricing, but policies unchanged

BY JORIS EVERS

As promised, Oracle Corp. last week made a guide to its software licensing policies available on its Web aite and said the 40-page document should answer up to 90% of the questions users have about the company's pricing models.

The Software Investment Guide doesn't include any changes to Oracle's licensing plans or provide information that wasn't already available, according to users and analysts who reviewed draft versions. But it does pull together licensing details that were previously found in various documents.

Tom Wyatt, president of the independent Oracle Applications Users Group in Atlanta, said the guide encompassea licensing areas that were covered by "20 or 30" separate documents until now.

"It provides a great resource for users to understand the terminology of software pricing and how that applies to an organization's structure," said Wyatt, who is director of Oracle systems at Sitel Corp., a customer service outsourcing firm in Baltimore.

Customer-Driven

Oracle first announced plans for the guide at its European OracleWorld conference in June, shortly after some of the company's licensing policies were criticized by users and analysts [QuickLink 30999]. Jacqueline Woods, Oracle's vice president of global pricing and licensing strategy, said the guide wasn't a direct response to the criticism, but she added that customer requests prompted the company to create it.

"Customers, some of them, may have felt that we were not as clear as we should have been, and we felt that it was important to provide that clarity," Woods said. "There was a sentiment that people could not find the information, or did not know where it was, or thought it was hard to get to."

Jane Disbrow, a Gartner Inc. analyst based in Columbus, Ga., said the draft version of the guide she read "was pretty much exactly what is already available oo the Internet, just that it is oow in one document that you can print out."

> I appreciate the opportunity to not have to talk to a salesperson.
>
> TOM WYATT, PRESIDENT, OAACLE APPLICATIONS USEUS GROUP

Though the guide gives users a high-level overview of Oracle's pricing policies, IT managers "woo't be able to determine what the best way would be to license a certain [software] environment by just reading the guide," Disbrow said. "There are no secrets in it, oo surprises."

But Wyatt said the document could help poteotial customers make up their minds about contracts without being led by Oracle's sales force. "I appreciate the opportunity to not have to talk to a salesperson," he said. "As a user, I can be more prepared in dealing with my salespersoo and potentially purchasing licenses through the Internet."

Wyatt had only one suggestion for Oracle: Update the guide as needed so it keeps its value to users. "The document should oot become stale," he said. "If it is going to be an end-user tool, it is important that it is continuously updated."

Evers writes for the IDG News Service.

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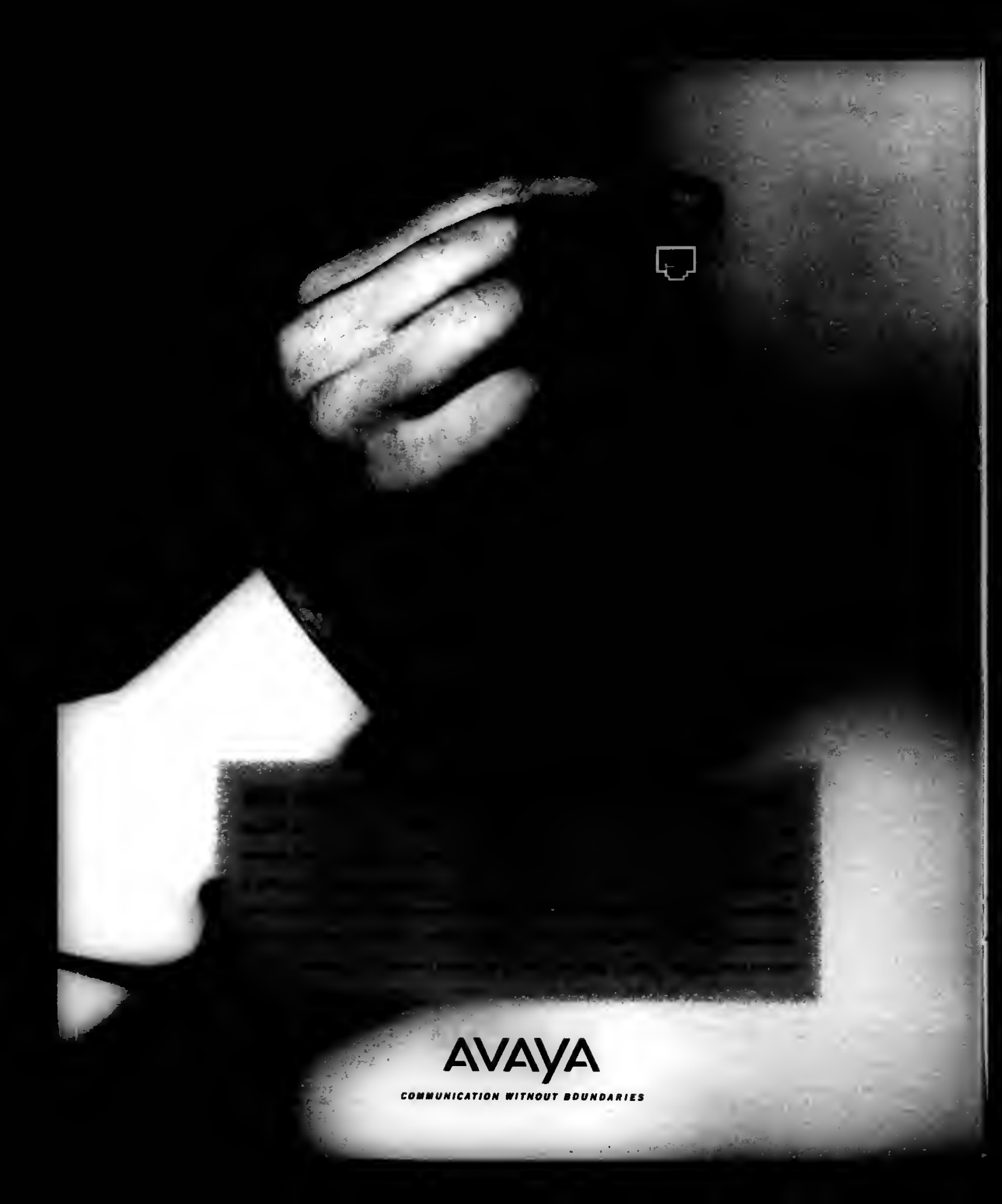
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CTO's Departure From Veritas Continues Spate Of Exec Changes

BY LUCAS MEARIAN

Veritas Software Corp.'s chief technology officer resigned late last month, continuing a series of high-level management changes that began early this year at the storage management vendor.

Analysts said nearly a dozen executives have left Mountain View, Calif.-based Veritas during the past six months. In the same time frame, the company has brought in several new senior managers to run its product and marketing operations and its merger and acquisition activities.

The dramatic shift in upper management follows a $651 million net loss last year and CEO Gary Bloom's assumption of the chairman's position in January. Bloom took over that job from Mark Leslie, whom he replaced as president and CEO in November 2000.

Veritas officials and industry analysts alike described the overhaul as a natural result of the ascension of Bloom, a former Oracle Corp. executive, to the top three jobs at the company.

"Seven vice presidents left in one week in April," said Michael Peterson, an analyst at Strategic Research Corp., a storage management market research firm in Santa Barbara, Calif. "This is Gary's operating style: to replace Mark Leslie's executive operating team."

A Veritas spokesman said via e-mail that Bloom has brought in a management team that "he's very confident with." New members include Mark Bregman, a longtime IBM executive who was hired by Veritas in February to oversee product operations, and Jeremy Burton, another Oracle veteran who was named chief marketing officer at Veritas in April (see box).

Veritas, one of the biggest vendors of storage management software, had $1.5 billion in revenue last year. In the wake of its big loss for 2001, the company in July reported a net profit of $70.5 million on revenue of $735.1 million for the first half of this year.

The management overhaul isn't a sign that Veritas is falling apart, according to Peterson. "It's a normal transition that occurs when you change top execs," he said.

But Anders Lofgren, an analyst at Giga Information Group Inc. in Cambridge, Mass., said Veritas is under more pressure from competitors such as EMC Corp., Sun Microsystems Inc., Mountain View, Calif.-based Legato Systems Inc. and even Microsoft Corp., which last week announced the first in a promised line of storage management software for Windows systems.

"I think there's still good technology coming out of Veritas, but they are feeling the heat more so than they have in the past," Lofgren said.

The latest executive to leave is Paul Borrill, who said he's stepping down as chief technology officer at Veritas to start his own company.

"I felt like I wouldn't be doing any harm to Veritas if I left now," Borrill said. "We do intend to continue to have a strong relationship."

Borrill, whose last day at Veritas was Aug. 29, wouldn't disclose details about the technology that his new company will focus on or say whether Veritas is helping to fund the venture.

Veritas said a permanent replacement for Borrill hasn't been named yet. Fred van den Bosch, executive vice president of product strategy and new product initiatives, will take over Borrill's job responsibilities for now.

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Comings and Goings

The management changes at Veritas include the following:

WHO'S IN?

Mark Bregman, executive vice president of product operations, including engineering and product management

Jeremy Burton, chief marketing officer

Paul DiMarzio, vice president of corporate development

WHO'S OUT?

Paul Borrill, chief technology officer

Michael Howard, vice president and general manager of the company's Internet division

Prashant Dhotekia, senior vice president of the availability products group

Neal Aker, senior vice president of the data protection products group

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Empowering the Internet Generation

Hershey Upgrades R/3 ERP System Without Hitches

BY TODD R. WEISS

Hershey Foods Corp. ran into major problems when it deployed SAP AG's R/3 software and other business applications three years ago. But the candy maker had better luck with an upgrade to the Web-enabled version of R/3.

Hershey late last month said the upgrade of its enterprise resource planning (ERP) system to R/3 4.6 was completed 20% under budget and without any of the order processing and product-shipment disruptions that marred the initial $112 million rollout in 1999. The upgrade began in July 2001 and was finished in May, the Hershey, Pa.-based company said.

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Hershey said it was able to make more than 30 improvements to its core business processes within 60 days of going live with R/3 4.6, which is part of SAP's mySAP.com product line. The company cited enhancements such as the automation of pick-list processing and materials management invoice verification, plus credit processing for distributors to military customers.

Those improvements have helped reduce costs and speed up processing times, Hershey said in a statement. The company added that it has also "achieved a near-zero-defect production environment" with R/3 4.6 and is using SAP's business analysis tools to measure the impact of sales and marketing programs as they happen.

Hershey officials declined to comment beyond the statement issued about the upgrade. In the statement, Joe Zakutney, director of the SAP upgrade program, said Hershey's IT staff was able to exceed its delivery commitments for the project because of "strong program management and executive leadership, diligent planning and . . . an extensive testing and training plan."

Joshua Greenbaum, an analyst at Enterprise Applications Consulting in Daly City, Calif., said Hershey's experiences illustrate the fact that most troubled ERP rollouts are caused by project management issues, not faulty software.

Despite the initial problems, Hershey stuck with R/3 because it recognized that it could get a lot of business value from the technology "if they bothered to do it right," Greenbaum said.

In fall 2000, Hershey said that it had fixed most of the initial problems with the ERP system.

For the upgrade, the company enlisted the help of SAP and Accenture Ltd.

An SAP spokesman acknowledged that there was "some pain involved" in Hershey's initial installation. "This has often been a case that's cited for past troubles . . . which is why we're particularly pleased" about the upgrade process, he said.

Reporter Marc L. Songini contributed to this story.

Bankrupt Trucking Company Spares Half of IT Staff – For Now

BY LINDA ROSENCRANCE

Half of the 120 IT workers at Consolidated Freightways Corp. were kept on the job when the Vancouver, Wash.-based trucking company shut down most of its operations last week. But the reprieve will be only temporary.

Consolidated Freightways, which plans to liquidate its assets under Chapter 11 bankruptcy protection, said the remaining IT employees are needed to support key technology systems that will remain operational until final deliveries are made to customers.

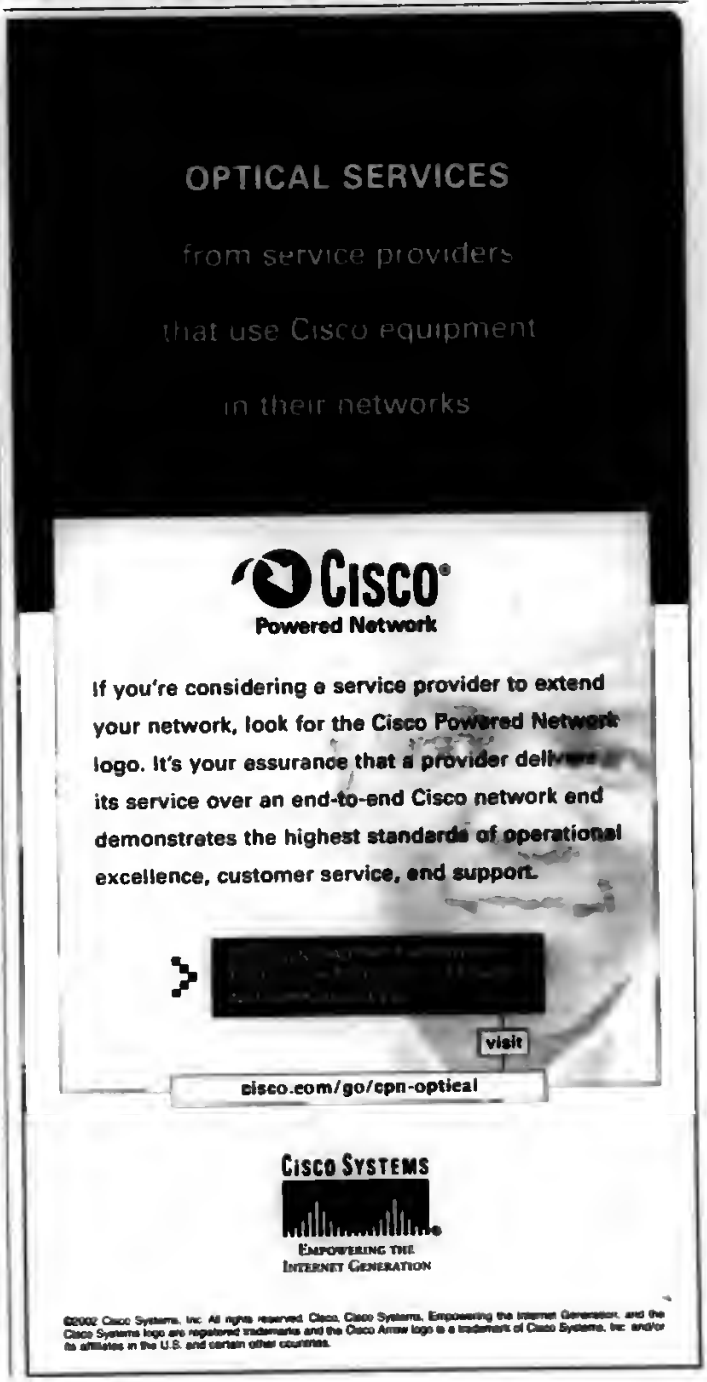
For example, the company said it will continue to send electronic data interchange transmissions to customers and will still let them track shipments via its Web site. A secure portion of the Web site will also continue to be available to customers, the company added.

Mike Brown, a spokesman for Consolidated Freightways, said the rest of the IT staff was laid off last week as part of a cutback that affected about 12,400 of the company's 15,500 employees. The company hasn't yet determined how long the remaining IT workers will keep their jobs, Brown said.

However, Consolidated Freightways noted that all the employees who are still on its payroll will be phased out in an "expeditious shutdown." The company said that it doesn't have the financial resources to continue operating.

The liquidation process will include a sell-off of Consolidated Freightways' technology assets, Brown said.

Despite the planned shutdown, the company said its CFAirFreight and Canadian Freightways Ltd. subsidiaries will continue to operate as stand-alone businesses. Those units have their own IT staffs, Brown said.



MARYFRAN JOHNSON

Once Again, IT Responds

WHEN WE POSTED our Sept. 11 aftermath survey on *Computerworld.com* a few weeks ago, I had to wonder if anyone would even respond. There's such a feeling of national exhaustioo in the air as we approach this dreaded first anniversary. As beleaguered as they are with constrained budgets and continuing security worries, would IT professionals be willing to answer yet another round of questions about the ongoing impact of 9/11?

MARYFRAN JOHNSON is editor in chief of *Computerworld*. You can contact her at maryfran_johnson@computerworld.com.

Indeed you were, and once again, you responded. Some 2,620 of you — both management and staff — generously took the time to give us feedback about the sorry state of IT spending on security today (see story, page 6). Only half of our respondeots said their companies had launched new projects to improve data security in response to the terrorist attacks, while 41% noted that nothing had changed.

To their credit, most firms (61%) were managing to keep other IT projects on track, regardless of the additional security demands, although a substantial 23% of our sample was forced to cancel or postpone such projects. The weighty responsibility of keeping business networks and data safe has never felt heavier.

"Initially, there was a great fervor about security and business continuance," Meta Group analyst Mark Shainman told our reporter Mark Hall. But those good intentions began to fade in the face of recessionary budget realities, coupled with the hope that existing security plans would provide enough protection.

Perhaps they will. But it's a more frightening gamble than corporate America is usually willing to take. Researchers at Gartner estimated last year that 60% of U.S. businesses — particularly those that rely heavily oo their IT infrastructures — haven't speot enough on business cootinuity or disaster recovery to guarantee their own survival. And in another poll released this month by *CSO* magazine (a new sister publicatioo of ours), 59% of 1,000 chief security officers said electronic attacks pose a mucb bigger concern to their companies than physical ones.

"Everyooe agrees [security is] a big issue, but there's no budget for it and you still have to deal with it," said one of our survey respondents. That observation neatly summarizes the situatioo for IT as fiscal 2003 looms: mounting threats and minimal resources.

In fact, our survey showed that those who have been spending more money oo security are mostly draining the cash from existing IT budgets (28%) rather than funding it with additional monies (16%) or turning to sources outside of IT (8%). Jazzier technologies such as biometrics and authenticatioo get short shrift on the shopping list, as security spending concentrates oo practicalities such as additional data security and backup.

Indeed, it is the practical, problem-solving nature of IT pros that continues to impress us. in the aftermath of the attacks last year, our office was flooded witb calls from IT people volunteering their technical expertise and assistance. During the year that followed, we've writteo hundreds of stories about how you have all continued to cope with new security demands and old budget problems.

Throughout this issue, in this mournful memorial week, you'll find another dozen stories labeled "September 11: IT Responds." Some of those articles, we hope, will give you fresh ideas to consider in areas such as vulnerability testing, business continuity, disaster preparedness and even IT cootract negotiation. Others provide the latest news on how your colleagues in IT cootinue, as always, to respond.

And in case no one's said this to you lately: Thank you for being there, and for getting the job done. ◗

PIMM FOX

9/11 Prompts Paper Chase Out the Door

AS THOUGHTS TURN to the tragic events of last September, there are lessons to cull from the wreckage of the 35th and 36th floors of the north tower of the World Trade Center.

This was the site of Kemper Casualty, a division of Kemper Insurance. The attack cost the company office space for 225 employees (all of whom were safely evacuated) and 11 servers. The employees were relocated to New Jersey and Long Island, N.Y., while trucks loaded with monitors, laptops, servers and phone switches rumbled from Kemper's Chicago-area facilities to the East Coast to augment the firm's disaster recovery efforts.

PIMM FOX is a freelance writer in San Francisco. Contact him at pimmfox@pacbell.net.

The emergency plan proved workable, with e-mail restored before midnight on 9/11 and all data from applications available within 48 hours.

A clear success, but Kemper was hardly complacent afterward.

"Paper is difficult to replace," says Roo Roecker, CIO at Kemper Casualty, "and we lost a lot of paper that day, and that had a big effect on our agents, brokers and customers."

That's why Roecker made a commitment to move as many of the company's paper files to a digital format within a cootent management system as possible.

"Everything is being Web-based," says Roecker, "including our internal applications; it makes deployments to dispersed locations easier."

To reach his goal of removing as much paper from the business as he can, Roecker has moved to a centralized IT organization because it's easier to manage the deployment of Web-based applications. He'll also use this

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ceotralized approach to control what's on desktops.

The process began as documents were transferred into an electronic format. Then Roecker took advantage of content management's collaborative possibilities.

"When we did the analysis, we saw the functionality of going with content management as a way to build a collaborative environment," he says. He cites the scenario of an underwriter in Chicago working with an underwriter in New York by phone and e-mail rather than faxing documents back and forth.

"We doo't have to have the person in Chicago fax a thousand pages of a policy to someone in New York," Roecker says, adding, "There's a workflow piece that comes with content manager," referring to IBM's Content Manager technology.

The content management system also produces to-do lists that are sent to users' e-mail boxes with specific notations so agents and brokers working on common files can follow the flow of notes and comments. And unlike sticky notes, those comments can't get lost.

"Decision-making times are squeezed down from weeks to hours," says Roecker. "That's how content management is changing things in the insurance business."

THORNTON MAY

Critical Thinking Fails at Dell

SOMETIMES companies can do things so well for a while that they believe that their future will be a repetition of the past. History is littered with the carcasses of corporations that believed this.

What surprises me these days is that Dell Computer's latest strategy demonstrates that kind of very limited wedoo't-have-to-take-those-kinds-of-risks-anymore conservatism. I sense a lack of critical thinking.

This is a pity. Dell is a smart company. Along with the rest of the industry, I have come to expect truly differentiated and innovative strategic thinking from the folks in Round Rock, Texas. However, the strategy-makers at Dell appear to have started to believe their own press clippings.

This failure of critical thinking about Dell's future isn't limited to the people inside the company. It pervades the entire industry, the press and academia. Of late, Dell is suffering from the same they-can-do-no-wrong-the-world-belongs-to-them media sycophancy that precipitated Enron's fall from grace. Meanwhile, B-school professors trot out lame and ob-so-historical supply chain cases showing how Dell's direct model is eating everyone's lunch.

Thornton May is a longtime industry observer, management consultant and commentator. Contact him at thorntonmay@aol.com.

Of course, Dell has a great track record. It was prescient in designing its direct-to-consumer model. It was courageous in avoiding the siren song of SAP's allegedly integrated software. And it was absolutely spot-on in creating a second-to-none customer assistance/support competency. However, that was yesterday. As a futurist I ask, What about tomorrow?

Dell has stated its intention to enter three markets by the end of the year: printers, handhelds and unbranded PCs. But it's entering existing markets, not creating them. This is tragic. Dell is bypassing an opportunity to reignite the entire technology sector. Stealing some printer sales from Hewlett-Packard and pumping out a couple more Palms isn't the answer.

I see three monster game-changing opportunities looking Dell right in the face. In the future, the big money for Dell lies not in selling more boxes but in selling its expertise in supply chain efficiencies and direct-to-consumer competence. If I were Michael Dell, I would go to the industry leader in each vertical market and offer to streamline its supply chain in exchange for all the gear the company buys and a piece of the equity upside.

Next, I would have some sassy informatioo architects repackage all that "what is being bought" information that aggregates so easily from the proper operation of the Dell direct model into meaningful top-of-the-house briefing nuggets.

Finally, I would take the Dell direct model, which redefined point-of-sale technology, and create point-of-design systems. Have CTOs log oo and create their "fantasy product sets," then link with venture capitalists to fund and build prototypes.

The question is not whether Dell has a future; it's whetber that future is spelled with a big *F* or a little *f*.

READERS' LETTERS

Plainer Than Plain English

I AGREE WITH Kathleen Melymuka's points in her article "Failure to Communicate" [QuickLink 31976], however her "plain English" translations still contain geekspeak. Most business people will not understand terms like *plug and play* or *core*. Also, the explanation of VPN isn't really understandable unless you understand the underlying principles, which business people shouldn't have to. Most of the items on the list are at too detailed a level, and an IT person shouldn't discuss these kinds of things with a business person, whether he's using jargon or plain English. Instead of using plain English to describe what a proxy server is, you should just say we need to buy some additional computers so we can get faster access to the Internet, and leave it at that.

George Alland
Woodbury, Minn.

Easing Software Liability

AFTER MANY YEARS in the software field, I don't believe that the suggestions offered by Patricia Keefe in her editorial "Software Insecurity" would really help [QuickLink 31815]. True, there's a lot of buggy software, but many software companies I have worked with try hard to reduce bugs as much as possible. Software is much more complex than many other products. It takes too much effort, money and time to try all the millions of combinations possible. The only folks who were successful in doing so to some extent were proprietary manufacturers in the '70s and '80s that controlled both hardware and software.

Trying to increase software product liability will end up costing us all much more than the bugs we have now. Big liability requirements are excellent for big vendors. Their smaller competitors can then be easily crushed financially. Instead of thousands of software vendors, we will have a handful. Your software may work better, but it will cost you a lot, and you will have to wait a long time for new features, since everything has to be extensively tested.

Sanjay Murthi
SMGlobal Inc.
Cary, N.C.

Sold on Convergence

IN HIS ARTICLE "Conversation Trumps Coovergence" [QuickLink 32209], Michael Gartenberg makes the same mistake with PDAs and phones that Bill Gates did with the 640K memory limit and that early IT purchasing managers did by deciding color screens served no business purpose: He focuses only on current uses and not on the potential in the future. Having used a combined PDA/phone heavily for several years (the Nokia 9110, not sold in the U.S.), I find that most of my serious PDA use involves the cellular connectedness and telephone integration of the device. The 3,000-plus phone numbers in my address book are instantly available by the phone, so I rarely have to dial numbers or receive a call that isn't identified by name. E-mail messages and attached documents are available in the PDA for reading or forwarding. Faxes can be received and stored for paperless use anywhere. Information in e-mail doesn't have to be copied to my PDA calendar or address book — it's already there. Notes taken on the PDA, news articles and other information can be e-mailed or faxed in one click. Gartenberg is, of course, correct that all this functionality could be achieved by a set of devices communicating through Bluetooth or a similar protocol. But that raises even more complex issues in interface design, protocol design and wireless communication speed. I suspect that had Gartenberg's research included people who are already using convergence devices, he would find that none would give them up to return to primitive, unconnected PDAs.

Bruce Krulwich
Chief technology officer
Linguistic Agents
Jerusalem

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THIS WEEK

IT FIGHTS TERROR

The Los Alamos National Laboratory is focusing its considerable scieotific expertise oo homeland defense and the war oo terrorism. PAGE 30

ASSESSING VULNERABILITY

Since Sept. 11, IT managers have been taking steps to inventory their applications and patch vulnerabilities. While software tools can automate those processes, they can also add complexity. And most doo't help with the patching and repair process. Some companies are turning to assessment applicatioo service providers for help. PAGE 34

DRIVING STORAGE CONVERGENCE

The limitations of storage networking will be overcome only by fully converged SAN/NAS network storage, says Network Appliance CTO Steven Kleiman. PAGE 36

SECURITY JOURNAL

Eliminating rogue wireless LAN access points turns out to be a much easier task for security manager Mathias Thurman than creating policies and standards for a secure WLAN infrastructure. PAGE 38

QUICKSTUDY

Universal Description, Discovery and Integration is an XML-based, platform-independent, Internet-accessible registry in which businesses, software vendors and programmers can describe the Web services they offer and provide links on how to use them. PAGE 40

GARY H. ANTHES

Metaphorically Speaking

TECHNO-ENTREPRENEUR RAY KURZWEIL recently bet Lotus founder Mitch Kapor $10,000 that a computer will pass the Turing test before 2029. British computer science pioneer Alan Turing in 1950 said that if a human interrogator, communicating blindly via text messages, couldn't distinguish responses from a human from those of a computer, then the computer could be deemed to have human intelligence.

Kurzweil maintains that by 2029, we will use nanoscale brain-scanning technology to completely map and understand how the brain works and then reverse-engineer it in a computer.

But Kapor says Kurzweil is making a dubious assumptioo — that the brain in fact works like a computer, albeit a very complex one. Kapor argues that we shouldn't engage in "distant extrapolatioo" of the brain-as-computer metapbor. An overreliance on biological metaphors has been the undoing of much of artificial intelligence, he says.

Indeed, we have used concepts from biology as computational metaphors ever since Aetna Insurance installed its first "electronic brain" (an IBM 650) in 1954. Sucb metaphors can give the layman a shallow inkling of what's going on. But computer scientists and application developers would never rely on them to guide their work, would they?

It turns out researchers are increasingly doing just that. Stephanie Forrest, a computer scientist at the University of New Mexico, is building systems that can detect hacker intrusions by imitating the human immune system. A key challenge in computer security is determining what is normal behavior and what is potentially harmful behavior in a computer or network, especially when threats are changing regularly.

Forrest's systems automatically "discover" what is normal and what is not, just as our immune systems have learned to do. Her software is largely self-maintaining and doesn't require updating by experts. A computer scientist at Los Alamos National Laboratory, appointed to an antiterrorism research task force after Sept. 11, told me the technique holds great promise for bomeland security.

Now consider the ant. Rather than relying on complex, centralized logic, systems that mimic ant behavior use many small, autonomous software agents. With each acting on the simplest of rules, just as ants do, these agents together can solve problems that, viewed as a whole, are enormously complex. Today, software based on ant behavior is used for optimization applications such as factory scheduling, vehicle routing and telecommunications switching.

GARY H. ANTHES is Computerworld's editor at large. Contact him at gary_anthes@computerworld.com.

Meanwhile, other researchers are developing systems based on "evolutionary computing" to solve factory scheduling and optimization problems. The systems iterate through many trial solutions, breeding better and better ones from the most promising parents in each generation of trials. Solutions literally evolve in a process that selects the "fittest" in every generation.

These biology-inspired algorithms aren't just the stuff of Ph.D. dissertations. Researchers have really studied the immune system, ants, evolution and other biological phenomena and have invented useful new computational techniques based on them.

If you are a creator of software, or even a user of it, you might do well to look to nontraditional sources, biological and otherwise, for inspiration. And you might consider that the falling cost of computer cycles makes problem-solving approaches that were only theoretically possible a few years ago practical today.

Richard Gabriel, a computer scientist at Sun Microsystems, says he does 90% of his research on the Internet and that it can already pass the Turing test. "That's a heck of a smart thing out there," he says. "I just typed into Google, 'How do I change a tire?' and I got the answer on the first page."

Even Kapor would have to admit that the Internet works a lot like the brain. It consists of millions of loosely connected nodes (neurons) whose relationships (synapses) change constantly. Nobody has trained the Internet to answer questions like how to change a tire, and nobody maintains a huge database of rules. Like the brain, the Internet continues to work even when a large number of nodes or links are broken.

I'm guessing Kurzweil will win the bet. If he does, it will be because IT people look to biology for ideas — not for superficial analogies, but for real guidance.

IT to Fight Terror

Los Alamos National Laboratory focuses its science on homeland defense. By Bob Brewin

LOS ALAMOS NATIONAL Laboratory, which developed the atomic bomb that helped end World War II, has since Sept. 11 focused the scientific expertise of its 7,500 employees on homeland defense and the war on terrorism while continuing its mission of nuclear weapons research.

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IT Responds

The Los Alamos, N.M.-based laboratory, which is owned by the Department of Energy and operated by the University of California, is tapping into its expertise in everything from quantum physics to computer science. Research is backed by massive supercomputers, including a 30-trillion-operations-per-second cluster due to go online by year's end.

Los Alamos isn't looking for immediate results. Rather, it's applying its resources in arcane sciences to develop tools and even products that can be applied years down the road, though it will also commercially spin off promising systems quicker.

For example, according to Terry Hawkins, leader of the laboratory's nonproliferation and internal security division, Los Alamos is developing a method to detect biological agents such as anthrax by combining a biological antigen with a computer chip. The antigen, Hawkins says, "acts the same as a human cell" in detecting the presence of an agent. The antigen is housed in a double-layer membrane formed from lipids, a class of insoluble organic compounds that are constituents of living cells.

Electrical current in the membrane passed to the chip could give a user an instant readout of the type of biological agent it has detected. Hawkins says Los Alamos has already developed a system that can detect the potentially deadly Hanta virus, which is prevalent in mice in the Southwest, and he believes that in time it may be possible to develop a portable, programmable device that can detect a number of viruses. Such a tool could also play a significant role in helping public health agencies battle diseases such as the common flu, he adds.

Deborah Leishman heads a knowledge modeling team at Los Alamos that helped develop a tool called EpiSims for simulating the spread of epidemics — natural or terrorist-induced — in a large urban area. She says the tool will help public health agencies integrate data from various sources, such as emergency rooms around a metropolitan area, into a database that will provide insights that can't be gleaned from single data points.

Los Alamos developed EpiSims as a spin-off from an even larger program called Transportation Analysis Simulation System (TranSims) designed to model the ebb, flow and social interactions of people in a large city. Leishman says TranSims can help emergency management agencies devise evacuation plans for cities that don't have them, such as Washington.

Los Alamos has already modeled Portland, Ore., which has a population of 1.6 million. Leishman says she could use TranSims and the laboratory's supercomputers to model New York, which has a population of 8 million.

AN EPISIMS SIMULATION that shows the progress of a contaminant plume across the city of Portland, Ore.

Los Alamos has returned to its physics roots to find new technologies for cyberwarfare. Scientists have figured out how to use quantum mechanics to encrypt data inside a photon. The process, called quantum encryption, ensures that users can detect whether a photon has been intercepted, Hawkins said.

Though the laboratory has transmitted such cryptophotons a distance of six miles in free space, Hawkins says Los Alamos has more work to do before such a method becomes routine.

The Los Alamos computer and computational sciences division supports these and other homeland defense projects at the most fundamental levels, according to Stephen Lee, deputy leader of the division.

His division is engaged in multiyear projects focused on, for example, better ways to extract and model data for simulating nuclear explosions or terrorists' threats. The trouble with data measured in terabytes is that comprehending it taxes the mind. So Los Alamos is working on tools to extract meaningful information from data and present it in a usable form.

Los Alamos Director John Browne sums up the laboratory's long-term mission in a message to employees that puts the emphasis on being able to "anticipate scientific and technological needs in five, 10 or even 20 years." But, he adds, Los Alamos must also be ready to refocus its efforts quickly in order "to accommodate sudden and unanticipated changes to meet new national security requirements."

Brightly colored vehicles traverse a virtual highway in the TranSims traffic and population modeling program. Tracking the movements of each vehicle is possible based on analysis of simulated populations and data gathered from census information and other regional databases.

When completed at the end of [illegible], the Q[illegible] computer at Los Alamos Nat[illegible] one of the most powerful machines [illegible] perform 30 trillion calculations [illegible]

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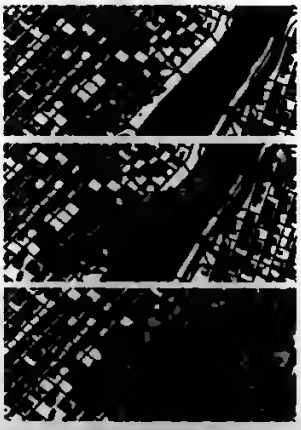

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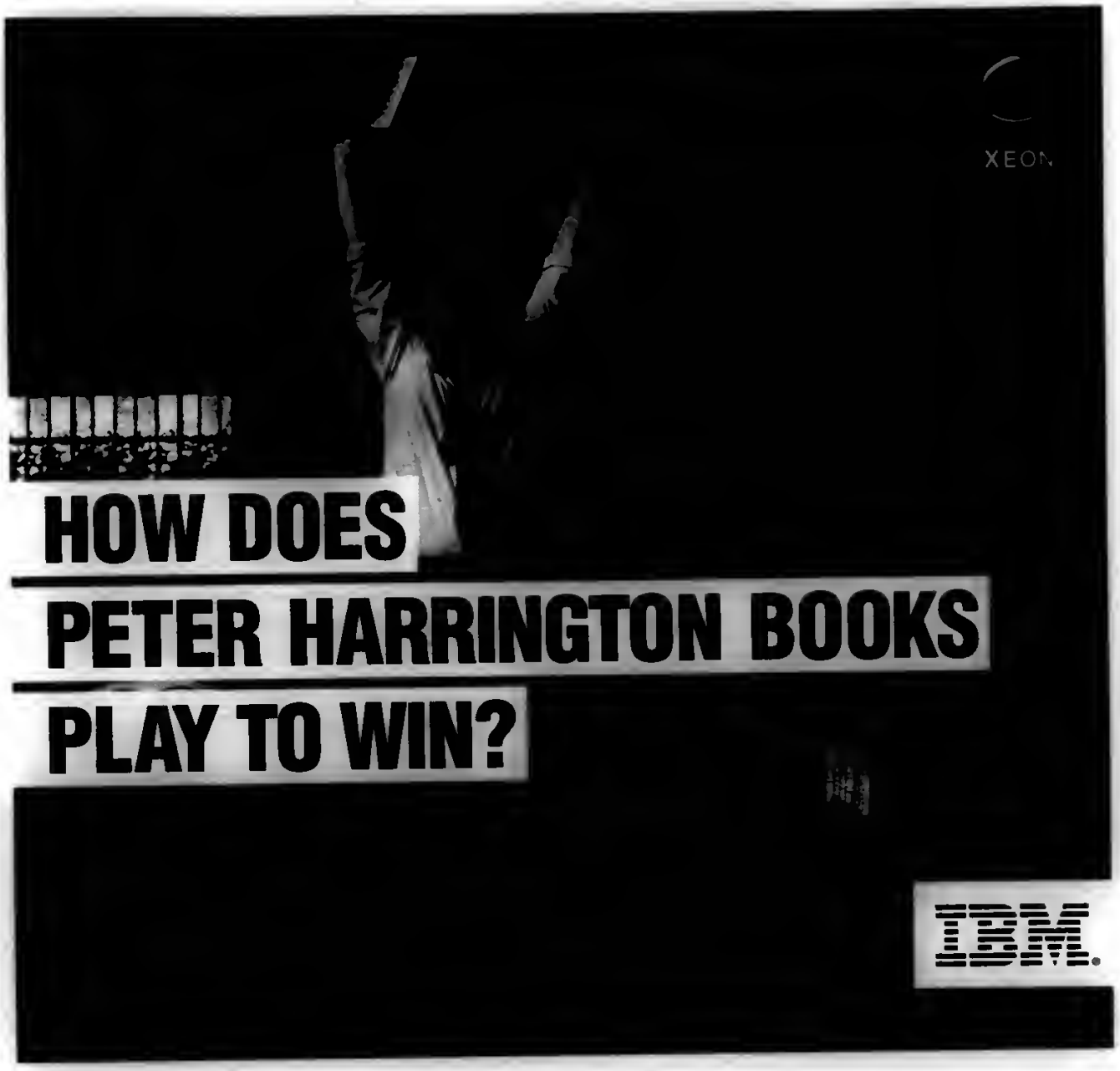

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Requires Parallel Sysplex® environment. [2]Excludes scheduled downtime [3]The IBM solution included two IBM UNIX server models 7026-M80 and 7026-H80 with IBM storage model 2105-F20 and IBM HACMP software. These server models are no longer available from IBM. All numbers and results reported are from customer sources. The customer example is intended as an illustration only. Costs and results obtained in other customer environments will vary depending, among other things, on individual customer configurations and conditions. IBM, the e-business logo, *e-business is the game. Play to win.* AIX, iSeries, pSeries, xSeries, zSeries, and Parallel Sysplex are trademarks or registered trademarks of International Business Machines Corporation in the United States and/or other countries. Linux is a registered trademark of Linus Torvalds. Intel is a registered trademark of Intel Corporation or its subsidiaries in the United States and other countries. UNIX is a registered trademark of The Open Group. Other company, product and service names may be trademarks or service marks of others.
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False positives and an overwhelming flood of information leave companies yearning for less confusing ways to assess their vulnerabilities. By Deborah Radcliff

Wanted: A Clear View of Vulnerability

WHEN A NEW, high-risk Apache worm was announced in June, Motorola Inc.'s IT security team was able to find and plug its vulnerabilities before the worm hit, thanks to Foundstone Inc., the company's vulnerability assessmeot partner, says Bill Boni, chief information security officer for Motorola's information protection services.

Since Sept. ll, IT managers have been taking steps to get their arms around the difficult job of inventorying their corporatewide applications and patching systems before an attack on vulnerabilities can take out vital services. But those tasks are expensive, time-consuming and ultimately impossible to achieve if done by manually scanning systems, say analysts.

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Thanks to a number of commercial and freeware tools on the market today, IT managers can automate those processes. But users say some of these tools can add even more complexity by scanning for too many vulnerabilities, leaving lists of things to repair that may not align with corporate security requirements, for example. Other tools spit out vulnerabilities and services that don't even exist. And most of the tools don't help with the patching and repair process, which many users say they want. Some companies, such as Tower Records, a West Sacrameoto, Calif.-based music and video retailer, are giving up on installing and managing their own tools and turning to assessment application service providers to simplify this vital function for them.

Vulnerability assessment tools, which cost $50,000 to $100,000 per year for a Class C network, use a variety of technologies. Some scan hosts for insecure services and ports, patch levels and other configuration problems. Network-based assessment tools examine traffic patterns for indicators of Simple Network Management Protocol, User Datagram Protocols and other traffic-related vulnerabilities. Some tools provide automated services over the Web. Some focus on application assessment. And some do all of those things.

Too Much Information

But without a way to manage and prioritize vulnerability reports, users are faced with the same problem they have with their closely linked intrusion-detection counterparts: too much information to sift through and act on. In response, some vendors are attempting to match their assessment information against information derived from intrusion-detection agents to weed out false positives and pinpoint true vulnerabilities. But they haven't been very successful, say analysts.

"Some scanners are really dumb. All they do is emulate a hacker operating with minimal or oo knowledge about a remote system and make assumptions about what's on the network, which creates a lot of false positives," says Patrick Heim, vice president of enterprise security at McKesson Corp., a $50 billion medical services and supplies vendor in San Francisco.

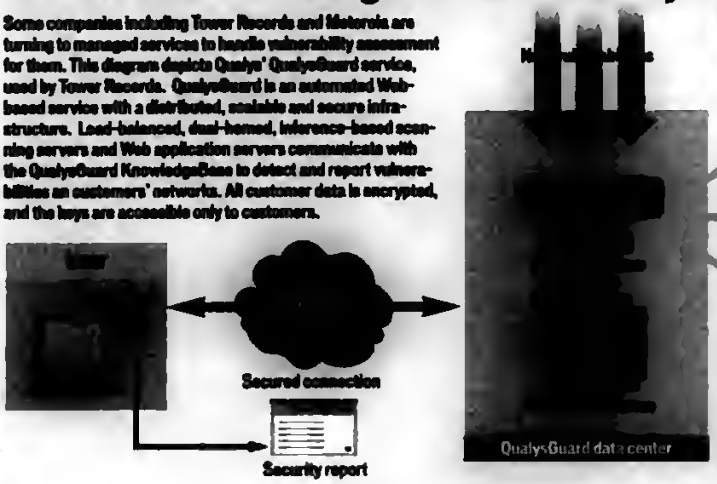
Internet Security Systems Inc., the maker of one product that has been criticized by a number of users and analysts for false positives, is taking steps to remedy the situation.

"ISS's scanner does have a reputatioo for having a very high false positive rate, not just on the operating system mismatches, but often reporting phantom services as being running even when they aren't," says John Pescatore, an analyst at Gartner Inc. in Stamford, Conn.

Atlanta-based ISS is trying to address the false positives with its Internet Scanner 7.0, which is scheduled to ship at the end of the year. Version 7.0 will include a dynamic check assignment to determine what operating systems are running on a host, including routers, to a higher degree of accuracy, says Patrick Wheeler, Ioternet Scanner product manager. And ISS's current Version 1.2 of RealSecure SiteProtector security management console incorporates a security fusion module that correlates vulnerability data and ISS's intrusion-detection data to a limited degree, so users can target priority repair areas, he adds.

One Answer: Managed Vulnerability As

Some companies including Tower Records and Motorola are turning to managed services to handle vulnerability assessment for them. This diagram depicts Qualys' QualysGuard service, used by Tower Records. QualysGuard is an automated Web-based service with a distributed, scalable and secure infrastructure. Load-balanced, dual-homed, inference-based scanning servers and Web application servers communicate with the QualysGuard KnowledgeBase to detect and report vulnerabilities on customers' networks. All customer data is encrypted, and the keys are accessible only to customers.



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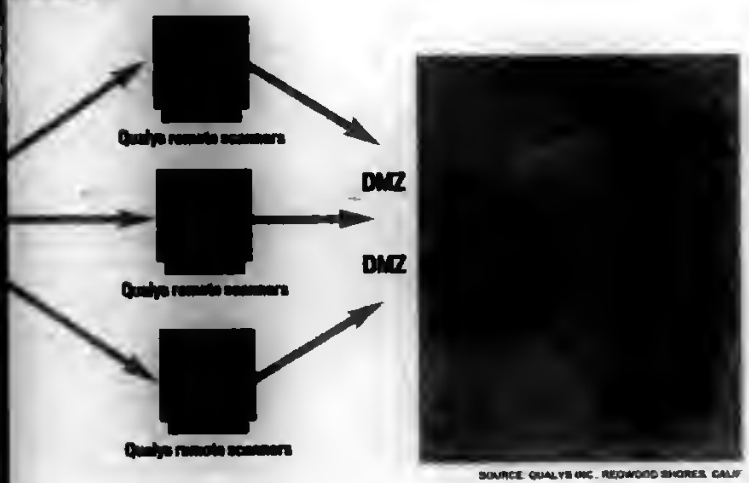

SOURCE: QUALYS INC., REDWOOD SHORES, CALIF.

Fusing intrusion-detection and assessment data would not only help prioritize repairs, but also reduce the oumber of reports coming from the intrusion-detection system sensors themselves, according to Pescatore. However, most vendors haven't integrated those two very well, he says.

Integrated Approach

A couple of exceptions might be nCircle Network Security Inc., a San Francisco-based risk-assessment vendor, and PentaSafe Security Technologies Inc. in Houston. Both companies use multipurpose agents for intrusion detection and assessment. They also approach vulnerability management from a policy standpoint, which further narrows vulnerability reports to only those issues that violate policy.

Thomas Murray, an IT analyst at consulting firm Headlab Inc. in Tulsa, Okla., has tested PentaSafe's products against other assessment tools from large network management and security vendors and small niche vendors. He says none offers the combinatioo of assessment, intrusion detection and policy managemeot that PentaSafe's VigilEnt security manager assessment tool and its policy manager do.

"We're still a little buried under data, but it's better than a 1-to-20 ratio of what our report volume was without these tools," says Murray. "The PentaSafe agents are fast. And you can configure them very tightly to reduce report logs even more. But that also takes time."

John Shields, a user of oCircle's IP360, says the network risk assessment package — particularly its ability to show exceptions to corporate policy — reduces administrative overhead and false positives to manageable limits.

"We doo't run Linux. So if someone in one of our 35 branches is adding a Linux system, IP360 will pick that up," says Shields, senior vice president of e-business at Patelco Credit Union in San Francisco. "We have fewer false positives, and now we need only one persoo to manage and respond to vulnerabilities."

Users also advise not getting caught up in the number of vulnerabilities that these tools scan for, because the more vulnerabilities they look for, the more report logs they produce. And users say they can't support too many logs. Instead, they want tn find the most critical vulnerabilities that account for the most commonly successful types of attacks on their networks and security policies. Then they want a way to ensure that those repairs are carried out.

"If you look at most scanner outputs, you have hundreds of vulnerabilities that can be addressed. The time it takes to manually make sure the patches are made is ridiculous," Heim explains. "With up to 20 system administrators responsible for different areas of a single box, I want to put something in place that can hold people accountable for repairs being made."

For this reason, Heim is leaning toward FoundScan from Mission Viejo, Calif.-based Foundstone as he evaluates assessment tools for his network. FoundScan assesses alerts as either high, medium or low priority, and it can customize alert levels. The software issues trouble tickets for high-priority repairs and reminds a predesignated responsible party when a particular repair hasn't been made within the specified deadline.

Of course, it would be nice if such products also automated the remediation process. Of the major assessment players, nnly Houston-based BindView Corp.'s bv-Control correction engine does any automated patching, says Gartner analyst Charles Kolodgy. The next best step is taking action to reduce the exposure while the repair is being made. In July, nCircle announced IP360's first automated response capability — automated blocking at Firewall-1 from Redwood City, Calif.-based Check Point Software Technologies Ltd., with other firewalls to follow.

In a Hurry?

Most of these products require installation of servers or agents or both, which most users say is a two- to three-day process for a Class C network, provided the vendor has a knowledgeable services team and few obstacles. But some IT managers say they don't want to deal with the upfront time of installation, nor do they want to own and manage the assessment technology. So they're turning to assessment application service providers such as Qualys Inc. in Redwood Shores, Calif., which charges $60,000 for an unlimited use subscription to scan a Class C network.

"There was no installation and no setup. All we had to do was give Qualys a list of the IP addresses we wanted them to check, and the next day we were ready to go," says Kevin Ertell, vice president of online operations at Tower Records, which signed up for QualysGuard late last year.

There's no faster way to start vulnerability assessments, adds Boni, who jump-started Schaumburg, Ill.-based Motorola on assessment by starting with Foundstnne's Web-based assessment service the day after the Sept. 11 terrorist attacks. He later transitioned to Foundstone's assessment product.

"The reason we were able to get into business so quickly on Sept. 12 is that we used Foundstone's Web services," Boni says. "There's no capital acquisition of hardware. You just plug in the IP addresses you want scanned and you're good to go." ▶

Radcliff is a freelance writer in Northern California. You can contact her at derad@aol.com.

The Annual Checkup

WHILE AUTOMATED ASSESSMENT TOOLS and application services can help keep networks running with minimal exposure, they're no substitute for an annual security audit by trained security staff, says Allen Carey, information security analyst at IDC, a Framingham, Mass.-based research firm.

Automated tools fail to take into account people, processes, best practices, physical security and other components of a comprehensive risk assessment sweep across a large organization, says Bill Ferguson, a partner at Tatum CIO Partners LLP, a Pittsburgh-based outsourcer of CIO consulting services. "When we do an audit, we look at 21 factors," says Ferguson. To help companies conduct more comprehensive audits of their own, he suggests that the following points be audited in a companywide assessment:

- Security policy and accountability for its enforcement
- Risk assessment against critical information assets
- Account management and access controls
- Authentication
- Configuration and change management
- Session controls
- Network security, Internet access policies and network services
- Cryptographic technologies for transmission and storage
- Modems
- System administration
- Incident response
- Auditing
- Viruses
- Contingency planning
- Backups
- Maintenance
- Labeling (is sensitive information clearly defined and labeled?)
- Media scrubbing and disposal
- Physical security
- Personnel security
- Training and awareness

ASSESSMENT CONNECTIONS

For links to assessment tool vendors and assessment service providers, see our Web site

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Driving Storage Convergence

As senior vice president of engineering and chief technology officer at Network Appliance Inc. in Sunnyvale, Calif., Steven Kleiman is the visionary behind the vendor's storage technology agenda. *Computerworld*'s Robert L. Mitchell talked with him about merging the worlds of storage-area networks (SAN) and network-attached storage (NAS).

What will the most important storage technology trend in the next 12 months? SAN/NAS convergence is clearly what's happening. We have two products that essentially export block-level interfaces. One is SnapDrive, and the other is our DAFS [Direct Access File System] Database Accelerator. We'll continue our architecture with a filer head with Fibre Channel-based interconnections.

Our system has an underlying block management layer that does the RAID layout optimization, and there's a file semantic layer on top of that that does things like create a directory and whatnot. And on top of that are the file protocols. We added a LUN [logical unit number] semantic layer, and that creates LUNs of various sizes and it goes right on top of the underlying block management layer. It uses the same storage and storage pool. Our intent is to try to . . . let the SAN stuff share space with the NAS stuff and take advantage of the array bandwidth that's available.

What about dynamically scalable volumes? That's not easy to do with SANs and Fibre Channel arrays. Will that change in a converged world? There are whole steps that you don't do with our stuff that you have to do with the traditional large-block server approach. The remaining SAN management storage management issues that SAN has are inherent in SANs.

This is one of the reasons why people like NAS. Some applications like the SAN protocols better, and we can deal with that. Personally, I think the NAS protocols, when used, lead to a more efficient use of storage.

Are you saying that host servers should read and write files instead of doing SCSI block transfers? They already do. The question is how this shakes out over time as people get higher- and higher-speed networks with low overhead file access protocols like NAS. We shall see.

Management of NAS boxes has traditionally been complicated by the fact that every NAS appliance must have its own filer head and management interface. How will this change in the future? We can bring down the overhead of managing multiple filers to a fairly small degree . . but the management of the storage [devices] themselves does not go away no matter what you do.

Today if you actually have to do some management, you do it on a head-by-head basis. Going forward, that will blend. You will see less of a head. Today that's not the case.

How exactly will that blend? In the data center you can solve some of the multiple filer problems with high-speed interconnect technology and try to bring a more scalable filer, if you will. The interconnect for our cluster in our new model is InfiniBand, and that's a clear direction in terms of using these new, high-speed commodity fabrics to build more scalable systems.

Fibre Channel can transport data but control and management information must be routed over an IP LAN, essentially requiring parallel networks to exist. When will this change? We've been pushing toward in-band management as much as we can, and the Fibre Channel community doesn't appear to be going there. My prediction is that it will stay separate for now.

With iSCSI you can route storage blocks over IP instead of Fibre Channel. But is the technology ready? If you look at our DAFS product, it's based on the [Emulex Corp. GN/9000SI] RDMA [Remote Direct Memory Access] over TCP/IP card that uses Gigabit Ethernet. We can get reasonably good performance with [it]. I think we'll be seeing some reasonable TCP/IP off-load cards that are quite competitive with [Fibre Channel host bus adapter] technology.

We're members of the RDMA Consortium, and the goal is to come up with a standard RDMA over TCP protocol in time to make the first generation of 10 gigabit TCP off-load engines. If this all comes to fruition, you will have one high-speed network that does traditional NAS and other communication protocols in an off-loaded way with iSCSI and DAFS all in one card.

Filers are expanding to tens of terabytes, but how do you back them up? A NetApp filer can support eight backup streams to tape. Even with the best tape technology, a 20TB filer would take 40 hours to complete a full backup. How do you get around that? You've come to the same conclusion I came to several years ago, that this is just hosed. The data is exploding way faster than tape is getting faster or bigger. We're addressing that by putting another level in the storage hierarchy with NearStor [disk-to-disk backup]. You should be looking over the next few months and further for a convergence of our filer technology and caching technology.

The goal is to get out of the backup business on a daily basis and make restore transparent, meaning there isn't a long downtime while you go ahead and restore something. I think tape becomes more of an archival mechanism where you do a full backup once a month, for legal purposes perhaps.

Reference data servers like EMC Corp.'s Centera create a unique ID for unchanging files, creating an abstraction layer between stored objects and the applications attempting to access them. Using the Centera application programming interface, an application can use this object name and no longer must track the path to the stored file. Will NetApp take a similar approach? I like to think that we're already there. Part of what NearStor is about is giving you low-cost ways of storing archival data.

Using a name based on the content is pretty easy to do, but I don't see a need for it. Most of the archiving mechanisms are done through applications like Documentum and Filenet, and truthfully they're the ones who should say what the underlying storage requirements should be. If there are specific enhancements that are needed for data integrity, which we don't believe right now, we can add those pretty easily. But I don't see it yet.

An object-based file system is certainly something Microsoft is working on embedding in a future version of Windows. The trouble is until that file system interface is standardized and agreed upon there's no point in protocolizing it. It's not embedded in every device like every host or every application server so the applications that do this stuff today seem perfectly happy with the semantics that they've got.

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Management of NAS boxes has traditionally been complicated by the fact that every NAS appliance must have its own filer head and management interface. How will this change in the future? We can bring down the overhead of managing multiple filers to a fairly small degree . . . but the management of the storage [devices] themselves does not go away no matter what you do.

Today if you actually have to do some management, you do it on a head-by-head basis. Going forward, that will blend. You will see less of a head. Today that's not the case.

How exactly will that blend? In the data center you can solve some of the multiple filer problems with high-speed interconnect technology and try to bring a more scalable filer, if you will. The interconnect for our cluster in our new model is InfiniBand, and that's a clear direction in terms of using these new, high-speed commodity fabrics to build more scalable systems.

Fibre Channel can transport data but control and management information must be routed over an IP LAN, essentially requiring parallel networks to exist. When will this change? We've been pushing toward in-band management as much as we can, and the Fibre Channel community doesn't appear to be going there. My prediction is that it will stay separate for now.

With iSCSI you can route storage blocks over IP instead of Fibre Channel. But is the technology ready? If you look at our DAFS product, it's based on the [Emulex Corp. GN/9000SI] RDMA [Remote Direct Memory Access] over TCP/IP card that uses Gigabit Ethernet. We can get reasonably good performance with [it]. I think we'll be seeing some reasonable TCP/IP off-load cards that are quite competitive with [Fibre Channel host bus adapter] technology.

We're members of the RDMA Consortium, and the goal is to come up with a standard RDMA over TCP protocol in time to make the first generation of 10 gigabit TCP off-load engines. If this all comes to fruition, you will have one high-speed network that does traditional NAS and other communication protocols in an off-loaded way with iSCSI and DAFS all in one card.

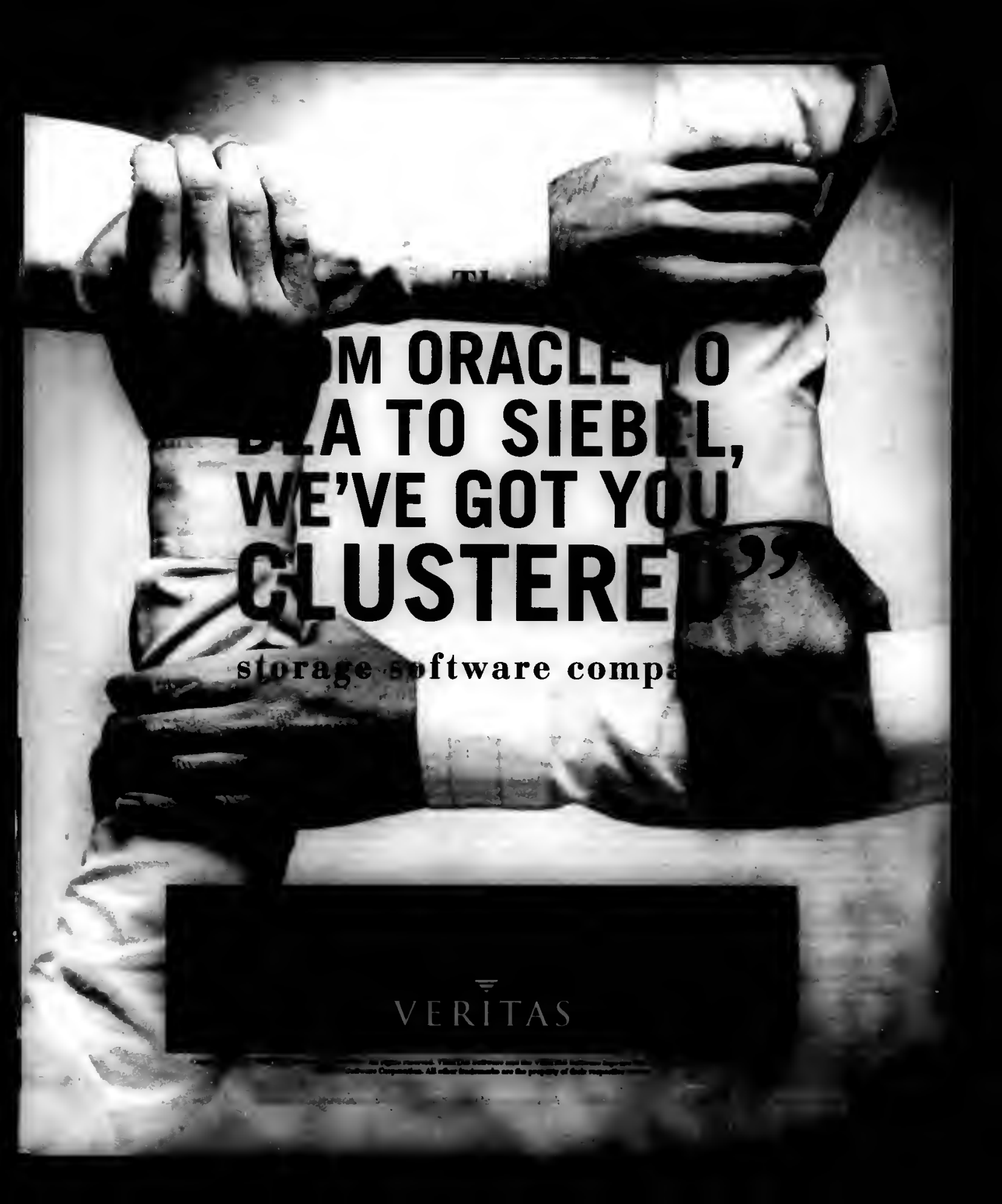
Filers are expanding to tens of terabytes, but how do you back them up? A NetApp filer can support eight backup streams to tape. Even with the best tape technology, a 20TB filer would take 40 hours to complete a full backup. How do you get around that? You've come to the same conclusion I came to several years ago, that this is just hosed. The data is exploding way faster than tape is getting faster or bigger. We're addressing that by putting another level in the storage hierarchy with NearStor [disk-to-disk backup]. You should be looking over the next few months and further for a convergence of our filer technology and caching technology.

The goal is to get out of the backup business on a daily basis and make restore transparent, meaning there isn't a long downtime while you go ahead and restore something. I think tape becomes more of an archival mechanism where you do a full backup once a month, for legal purposes perhaps.

Reference data servers like EMC Corp.'s Centera create a unique ID for unchanging files, creating an abstraction layer between stored objects and the applications attempting to access them. Using the Centera application programming interface, an application can use this object name and no longer must track the path to the stored file. Will NetApp take a similar approach? I like to think that we're already there. Part of what NearStor is about is giving you low-cost ways of storing archival data.

Using a name based on the content is pretty easy to do, but I don't see a need for it. Most of the archiving mechanisms are done through applications like Documentum and Filenet, and truthfully they're the ones who should say what the underlying storage requirements should be. If there are specific enhancements that are needed for data integrity, which we don't believe right now, we can add those pretty easily. But I don't see it yet.

An object-based file system is certainly something Microsoft is working on embedding in a future version of Windows. The trouble is until that file system interface is standardized and agreed upon there's no point in protocolizing it. It's not embedded in every device like every host or every application server so the applications that do this stuff today seem perfectly happy with the semantics that they've got.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Starting Over With WLAN Security

Eliminating rogue access points is easy compared with negotiating policy for a secure wireless LAN infrastructure. By Mathias Thurman

SECURITY MANAGER'S JOURNAL

DURING the past few weeks, I've dedicated a significant amount of time to creating wireless LAN (WLAN) policies and standards. A WLAN site survey I conducted a few weeks ago convinced me to accelerate my work in this area. I uncovered numerous misconfigured WLAN hubs, or access points (AP), that provided access to our network from the parking lot — and in some cases from the street.

To test for rogue hubs, I parked my car along the street in an inconspicuous spot beside our corporate headquarters, booted my laptop and inserted my WLAN card. Within seconds, my Yahoo Instant Messenger program woke up — a sure sign that I was on the network. From there, I was able to execute port scans, access our intranet and browse the employee list. I was also able to query our internal Domain Name System and discover the IP addresses of critical systems, such as databases and payroll systems.

Given some time, even a moderately skilled hacker could have drilled deeper.

Cutting the Signal

In response, I immediately began writing up a wireless security policy to get these unauthorized APs off the network. I then started work on developing a wireless standard to address the technology aspects of the policy.

Our new policy will allow wireless access so long as the employee's manager authorizes it and the user follows approved standards and procedures. The policy will also determine acceptable use to protect the company from any potential unauthorized activity that might compromise our network.

The CIO hasn't signed off on the policy but did authorize me to send an e-mail mandating the immediate removal of unauthorized APs. A few days later, I fired up Mountain View, Calif.-based AirMagnet Inc.'s AirMagnet Handheld PC card and detection software on my Pocket PC to check for compliance. Sure enough, some APs were still online. Using the device's signal strength meter, I pinpointed two of them and got them pulled off the network, but I'm having a hard time locating one last rogue AP. I'm trying to get a directional antenna to assist with that task. That last rogue AP appears to be configured properly, with encryption enabled, but it still needs to be removed from the network.

The standards document is the most time-consuming aspect of this project. We've already decided to use Aironet WLAN APs from Cisco Systems Inc. We felt Cisco's Lightweight Extensible Authentication Protocol (LEAP) was the most secure, if you implement it properly. When used with the Cisco Secure Access Control Server (ACS), LEAP also gives us the ability to use an external authentication and access control facility to control access to the wireless network.

> **Within seconds, I was able to execute port scans, access our intranet and browse the employee list.**

Wireless Authentication

The ACS can also communicate with external user databases and authentication services. This will let us authenticate users against a Windows NT Primary Domain Controller (PDC) that we've already provisioned. This is the same PDC we use to authenticate users to the network for access to e-mail, drive shares, printers and our company intranet. Now it will let users seamlessly access the network via the WLAN APs without requiring an additional log-in.

Next, I need to write a standards document that specifies the make, model and configuration for each WLAN component. Determining the proper configuration for a secure WLAN is the most time-consuming, technical and critical aspect of the project. To accomplish this, I consolidated configuration information from the results of a third-party audit, publicly accessible documentation from the Internet and vendor documentation. Then I scheduled a meeting with representatives from the network group and the IT department to discuss the available configuration settings for the APs, ACS and host software clients.

We agreed on a standard configuration that will address features, usability and security. This required some compromises. For example, the AP can support concurrent connections for a single user. I wanted to limit users to one session each; others argued that there might be occasions when the user drops a connection but the AP still thinks the user is connected. In that case, the user could establish another session without waiting for the AP to reset. In the end, we agreed to keep the connection setting at one for now, but I will authorize an increase if this scenario becomes an issue.

Another setting relates to the broadcast of the Service Set Identifier (SSID), a unique, configurable name that identifies the AP on the network. APs come configured with SSID broadcast turned on by default. If the AP doesn't broadcast the SSID, then the user must know the ID number before he can connect to the AP. We plan to disable SSID broadcast.

We also had to decide whether we needed third-party security enhancements such as a virtual private network or two-factor authentication to secure the environment. We decided to use Bedford, Mass.-based RSA Security Inc.'s SecurID tokenbased authentication, since we already have an RSA ACE/Server in place. But we soon discovered that RSA's SecurID doesn't support LEAP as the authorization protocol. RSA says it plans to support the new Protected Extensible Authentication Protocol (PEAP) standard, which will allow SecurID token-based authentication by way of the Cisco APs.

This new feature, which will require updates to client software, should be available sometime this month. Will it work? Stay tuned.

WHAT DO YOU THINK?

This week's journal is written by a real security manager, "Mathias Thurman," whose name and employer have been disguised for obvious reasons. Contact him at mathias_thurman@yahoo.com, or join the discussion in our forum.

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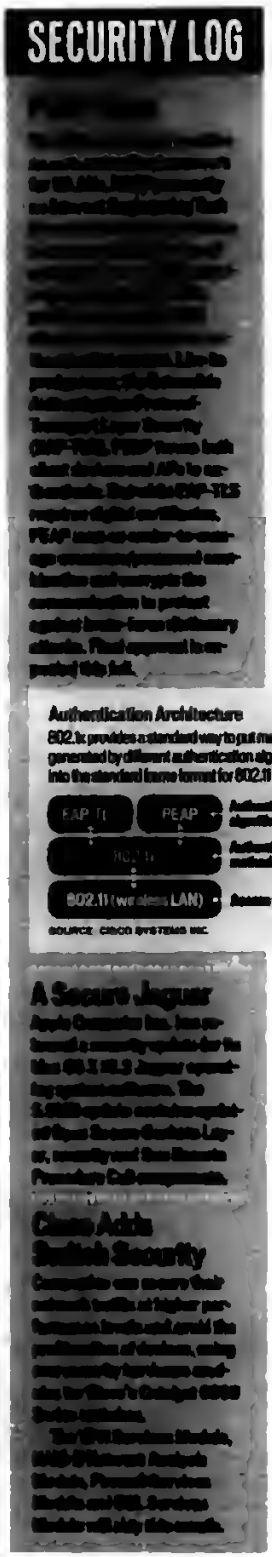

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UDDI: Looking Up Web Services

BY RUSSELL KAY

ORGANIZATIONS that attempt to do business online quickly learn that there are lots of IT-related problems that others have already solved. Increasingly, those solutions are becoming readily available to anyone, in the form of Web services. Web services are perhaps the latest, most powerful example of reusable program components, the difference being that instead of incorporating component code directly into your application, you simply access the service over the Web, pass your parameters along to it and let the remote service do the work for you.

It's an extraordinarily powerful model, but with one major hitch: How do you find out what Web services are available, where they are and how you use them? Businesses need to be easily able to discover one another, make their needs and capabilities known and integrate services using each business's preferred technology, Web services and commerce processes.

QUICK STUDY

Until recently, there was no simple way to get information about businesses and what services they support and no single point of access to obtain that information. Now there is Universal Description, Discovery and Integration (UDDI), a standards-based system for registering Web services.

UDDI is an industry effort started in mid-2000 by Ariba Inc., IBM and Microsoft Corp., along with 33 other companies. Today, UDDI has more than 300 community members, including American Express Co., SAP AG and Ford Motor Co. The UDDI group doesn't call itself a standards body, even though it offers a framework for integrating Web services. The UDDI specification utilizes World Wide Web Consortium and Internet Engineering Task Force standards such as XML, Simple Object Access Protocol (SOAP), HTTP and Domain Name System protocols.

UDDI entered its public beta-testing phase in November 2000, when the three founding members each set up a registry server compliant with Version 1.0 of the spec that would interoperate with other members' servers. As of mid-2002, all publicly available nodes of the UDDI Business Registry (UBR) have been upgraded to Version 2.0.

On July 30, technical development and management of the UDDI project was transferred to Santa Clara, Calif.-based Organization for the Advancement of Structured Information Standards, a global consortium developing and promoting e-business standards.

DEFINITION

Universal Description, Discovery and Integration (UDDI) is akin to an Internet phone book that describes businesses and the Web services each supports. It's an XML-based, platform-independent, Internet-accessible registry in which businesses, software vendors and programmers can describe the Web services they offer and provide links on how to use them.

How UDDI Works

At its heart, UDDI is a database that's searchable by type of business (typically identified using the North American Industry Classification System — NAICS — or the Standard Industrial Classification), business name or geographical location.

Let's say you have an electronic order-entry system that relies on SOAP-based Web services and you want to do online business with computer makers. You'll first need to know which computer makers have compatible Web services. A search of UDDI would return a list of those computer companies that have registered with the system.

UDDI registration is open to companies worldwide. When a business registers with UDDI, it provides the registry with "white pages" information about itself (including items such as name and contact info), "yellow pages" taxonomies (including NAICS business identifiers, products services and geographic location) and "green pages" information describing the company's business processes and how to do business with it.

Each service listed in the UDDI registry is identified as being a specific type of service with a unique identifier that comes from a pool of well-known service types already registered with UDDI. Service types registration includes a pointer to the namespace containing the service type description, who published the service, and a service type registration identifier, called a tModelKey.

While the registering business provides most registry information, the service type is normally entered by software developers, standards bodies or programmers.

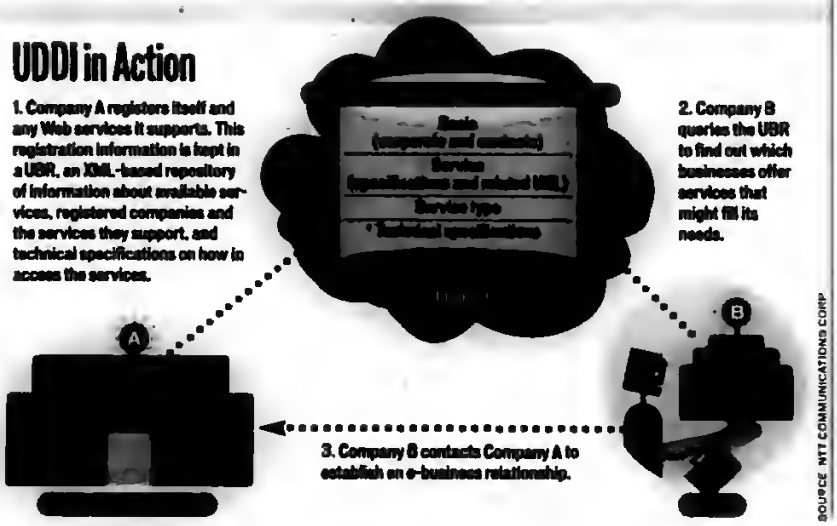
UDDI doesn't dictate that an organization must use a specific technology or methodology to describe its Web service interface. A company is free to use simple prose, more formal description languages, an XML schema or Web Services Description Language.

More than 10,000 businesses have registered with the three public UBR nodes, along with 4,000 individual providers of Web services. All registered data is replicated among all the UBR nodes.

Currently, there are three UBRs, with a fourth from Tokyo-based NTT Communications Corp. due to come online this fall. Hewlett-Packard Co. was operating a UDDI registry but in July announced that it would discontinue hosting the node. HP did say, however, that it intends to continue to support UDDI.

Kay is a freelance writer in Worcester, Mass. You can reach him at russkay@charter.net.

UDDI in Action



SOURCE: NTT COMMUNICATIONS CORP.

LOOKING FOR MORE?

For a list of online resources about UDDI, please visit our Web site:

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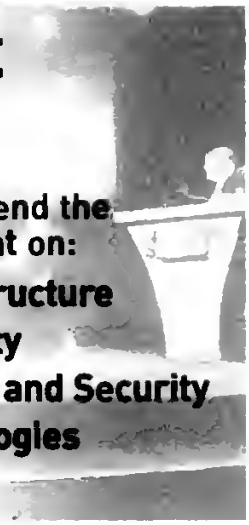

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Agenda Snapshot*

For details, updates, and to register visit our Web site.

Sunday, October 27

9:30am-11:00am	Industry Primer Tracks
Noon-5:00pm	Golf Outing (complimentary for users) at Disney's Lake Buena Vista Golf Course
1:00pm-5:30pm	SNIA-produced Technical and Business Tutorials • Voice of the User and Virtualization Track • Disaster Recovery, Backup/Restore, and High Availability Solutions Track • Securing and Managing Your Storage Networks Track • Focus on Networking Your Storage Track • IP-based Storage Track
7:00pm-9:00pm	Pre-conference Networking Reception

Monday, October 28

7:30am-8:15am	Continental Breakfast
8:30am-9:15am	Opening Visionary Presentation by Geoffrey Moore
9:15am-12:15pm	General Sessions
12:15pm-1:30pm	Networking Luncheon
1:30pm-4:00pm	General Sessions
4:00pm-5:00pm	Technical, Technical/Business and Business Tracks
5:00pm-8:00pm	Expo, Interoperability and Solutions Demo, and Buffet Dinner

Tuesday, October 29

7:30am-8:15am	Continental Breakfast
8:15am-8:55am	Opening Leadership Presentation by Fran Dramis
8:55am-Noon	General Sessions
Noon-1:30pm	Expo, Buffet Luncheon
Noon-7:15pm	Interoperability and Solutions Demo
1:30pm-3:00pm	General Sessions
3:00pm-5:00pm	Technical, Technical/Business and Business Tracks
5:00pm-7:15pm	Expo
7:30pm-9:00pm	Gala Dinner and Entertainment

Wednesday, October 30

7:30am-8:30am	Continental Breakfast
8:30am-Noon	Technical, Technical/Business and Business Tracks

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General Conference Package* (Oct. 28 & 29):	$1,095	$1,245	Yes	Yes	No
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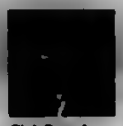

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THIS WEEK

MORE THAN A GAME

Transportation, energy and other critical-infrastructure industries are stepping up their participation in cyberattack exercises as a means of preparing for a terrorist-related disaster. PAGE 44

ACTS OF GOD AND VENDORS

The events of Sept. 11 have drawn attention to *force majeure* clauses in IT contracts. Here are some things to watch out for and steps you can take to protect your company from this typically vendor-controlled proviso. PAGE 46

ECONOMY CAPS SECURITY SPENDING

IT security spending has remained relatively flat since the 9/11 attacks, caught in the undertow of IT budget cutbacks. But one thing has changed: A growing number of firms are taking business continuity into their own hands. PAGE 48

GETTING THE MOST OUT OF OLD CODE

Even before all the uproar over Y2k, William Ulrich was an ardent evangelist about the need for companies to inventory and then integrate their legacy applications into Web-based systems. In his new book, he lays out a step-by-step plan for how to do it. PAGE 50

CAREER ADVISER

Fran Quittel offers guidance to a systems administrator with 20 years of AS/400 experience who wants to update her skills, and she helps a young IT worker explore career options after four years in the video game industry. PAGE 54

BART PERKINS

The Other Three *Rs*

AS BUDGETING SEASON APPROACHES, all IT managers are looking for ways to reduce costs. While your supplier portfolio is an excellent place to start, don't beat every last cent out of your vendors until you consider the three *Rs* of supplier-related cost reduction: repetition, redundancy and rigor.

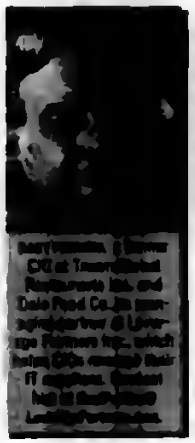
Repetition: Look for costs that recur automatically. Review monthly bills to make sure you are using the product or service for which you are receiving a bill. While the individual amounts may seem relatively small, removing these errors will generate savings each month for years. For example, telecommunications bills (which are often more than 100 pages long) may contain charges for unused lines or services.

Your asset management system may reveal other savings opportunities. Maintenance charges on retired hardware can continue long after the box has become a boat anchor. One of my firm's clients found that it was still paying several million dollars for annual hardware maintenance on point-of-sale equipment that had been retired for several years.

Redundancy: Eliminate redundant contracts and suppliers. It takes time and money to manage each one. Consolidation will reduce overhead and aggravation.

Highly decentralized corporations need to closely examine their divisional contracts. Often, divisions hold contracts with the same suppliers. Replace division-level agreements with a corporatewide contract.

Reduce the number of buyers in your company, since each buyer represents significant overhead. Overhead includes the time it takes to coordinate with other buyers, as well as the time required to become familiar with complex contracts, financial models and the IT architecture. Having fewer buyers not only reduces overhead, but it also minimizes redundant buying decisions. The vice president of procurement at a major financial services company said it well: "I am astounded by the number of manager-level employees who can obligate a $17 billion corporation."



Rigor: Rigor makes savings reliable and repeatable. Try to do the following regularly:

- Consolidate your technology purchases to obtain lower unit costs and ensure consistent pricing.
- Make sure your buying process contains checkpoints for both architectural and financial reviews.
- Before negotiating with suppliers, do your homework to anticipate their wants and needs. One well-known desktop lessor offered discounted lease rates to a client in anticipation that it would make additional profits from its new asset management service. And it's common for vendors, when entering a new vertical market, to offer low prices to the first few customers if they agree to serve as references.
- Demand business cases from the executive sponsor for all projects — and kill projects that lack clear justification.
- Charge the beneficiary for services rendered. Everyone is more careful about using resources when it affects their budget. Make chargeback policies consistent, understandable and fair to prevent P&L pingpong — sending a charge to someone else so it doesn't affect your profit and loss statement.
- Let suppliers help provide rigor. One client saved 18% of its maintenance costs by transferring its application maintenance (and staff) to an outsourcer. Another client saved 40% by buying systems administration as a service. Both clients were far more judicious about making changes when they realized they were paying "by the drink."
- Use e-procurement for commodity and catalog purchasing to standardize your buying process and ensure consistency.

These savings will be far easier to achieve if you've done a supplier portfolio baseline first [QuickLink 31023]. The baseline provides a road map for locating these and other IT savings. It tells you where you're actually spending the most money (probably different from your "common knowledge" estimate) and tells you when you're spending money you weren't aware of (and wish you hadn't spent).

A word of caution: Don't view outsourcing as a panacea. Never outsource one piece at a time without a master plan.

Use the three *Rs* to leverage your end-of-year cost-cutting measures. Repetition, redundancy and rigor are far more preferable to the dreaded and demoralizing fourth *R*: RIF, or reduction in force.

ANASTASIA VASILAKIS

Corporations are adding cyberattack exercises to their disaster-preparedness tactics. By Deborah Radcliff

More Than a Game

LONDON, DEC. 21, 9:02 A.M.: The secretary to the president of Big Dollar Credit in London gets a phone call: "You have oot lived up to your obligation. You will pay." She reports it to you. As the IT manager, do you care?

Two days later, a mass of electronic trading services goes off-line. Theo they're back online. Next, the phones go down at two of your trading partners' sites. Bombing threats are lodged against six London banking outlets. Now you care. But what do you do?

Welcome to a typical cyberterrorism exercise.

The purpose of the game is to rattle you, shake your confidence and push you into making critical mistakes. In so doing, your opponent wins the cyberwar, something U.S. government officials and many IT professionals think is more likely to happen since Sept. 11. In a June survey, 55% of 395 IT professionals at manufacturing, service, technology and other companies said they think it's very likely that utility grids, financial institutions, communications systems and transportation infrastructure will be the target of a major cyberattack in the next 12 months, according to the Business Software Alliance, a Washington-based software vendor lobbyist group, which conducted the poll.

Although no one knows precisely what a cyberattack will consist of, the common thinking among experts is that it will be part of a multitiered assault on physical structures and the computing networks of one or more critical infrastructure providers, such as energy, communications, transportation, finance and emergency services companies. The cyber part would involve things such as denial-of-service attacks and Trojan horses, or insider damage and types of attacks not yet thought of, say experts.

SEPTEMBER 11

The issue facing corporations and their IT departments is how to prepare and work with a cross-section of key players, including companies in other industries, emergency services, law enforcement and government agencies, so that all can effectively play their roles in a recovery from an attack on the nation's critical networked infrastructure.

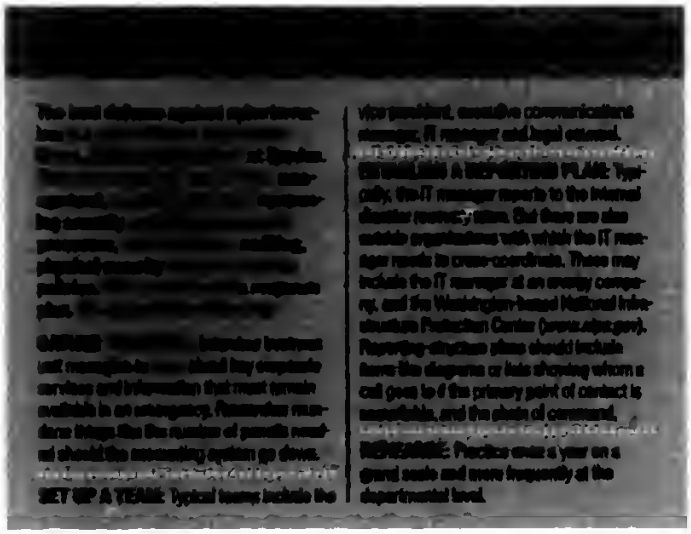
"We depend on oil and gas lines being operational, but you lose some of those dependencies when a cyber and physical attack hit simultaneously. How do you recover? How do you report?" says James Sample, manager of information security at the California Independent System Operator (ISO) in Folsom, Calif., the state's energy grid operator.

The best way to prepare is through practice, say Sample and other experts.

The number of counter-cyberattack practice games being carried out is still relatively low. But since Sept. 11, more exercises have become available than ever before. For example, the Bethesda, Md.-based SANS Institute, a security education group, will hold an exercise in Washingtoo next month. And the Seattle-based Pacific Northwest Economic Region, a regional economic development forum, has launched a cyberdefense training program called Blue Cascades, which conducted exercises in June that were attended by the California ISO and 120 electric power industry representatives from the Pacific Northwest and Canada.

In July, the Naval War College in Newport, R.I., held its first cyberattack exercises for the private sector. The training was co-sponsored by Stamford, Conn.-based Gartner Inc., which is also co-sponsoring a number of other counter-cyberattack training exercises in the coming months.

Most games typically start by assigning roles to participants, such as corporate vice president, public relations manager, law enforcement official, CIO or IT manager, explains Winn



Schwartau, president of Interpact Inc. in Clearwater, Fla. Schwartau, who coined the phrase *digital Pearl Harbor* in the early 1990s, started conducting cyberwar exercises for the military in 1995. After roles are assigned, participants are put on stage and Schwartau turns up the heat.

"Threats are piling up, communications are failing, the weather really sucks, and in the end I throw a fit and call them all incompetent jerks and storm from the auditorium," he says.

If the exercise is done right, IT professionals will think, coordinate and perform better in a real emergency, says Stephen Northcutt, a cyberattack exercise instructor for SANS.

"If you've never been under mass fire and suddenly you are, the odds are that your brain will shut down and you'll do everything wrong," Northcutt says. "So the biggest benefit these games provide is a dress rehearsal so you can develop actions out of theory."

At the very least, participants come away with a healthy dose of paranoia, says French Caldwell, a Gartner analyst specializing in knowledge management. For example, he says, during the Naval War College's exercise in July, a large swath of India experienced a major power outage — a real event that wasn't part of the game.

But because of the exercise, which was geared toward getting corporate executives to think like potential cyberattackers, some of the 84 corporate participants, among them chief security officers and CIOs from the financial, energy and telecommunications industries, conjectured that maybe the outage was a test bed for a cyberattack against the U.S. Another gaming event for response scenarios is being planned, says Naval War College professor Craig Koerner.

By getting into the heads of would-be attackers, participants learned two things, Koerner says. First, they learned that a terrorist's target isn't always going to be a military one; instead, it's often a high-profile private-sector organization that's selected for its impact on critical infrastructure services, such as the financial organizations and airlines that were damaged in the Sept. 11 attacks.

Participants also learned that those infrastructure targets are more interconnected than they previously thought, he says. For example, most companies have 72 hours' worth of fuel stored for their backup electrical generators in case the power should go out, says Sample. But if the blackout were to last longer, there would be no way to get more fuel for generators because it also takes power to run the pumps that dispense it.

The example illustrates the vital need for coordination across geographic boundaries and different industries and governments, Sample says. But the issue of trust among these groups isn't taken lightly, say Caldwell and others.

It's still difficult to share information across industries and government agencies, they say. And the government's own intelligence agencies, such as the FBI and CIA, can't even share information with one another, as a Congressional report noted, adds Sample.

"Now you've got private industry needing intelligence information that's classified by the government, [and] they can't give it to us," Sample says. "And we can't always give them the information that they want either."

That's why the most comprehensive cyberpreparedness exercises bring together people from different, interdependent sectors and government agencies and include practicing how information will be shared, says Koerner.

"When you game, you engage in back-and-forth discussions and debates, but ultimately you learn to coordinate with each other," he explains.

Participants like the California ISO are also using what they have learned during cyberexercises to hone their organizations' cyberattack response teams and policies and to conduct their own internal exercises, Sample says.

Cyberattack response policy should feed into the overall business continuity and disaster recovery chain of command, says Kevin Nixon, senior director of business strategy and chief security officer at Exodus, a Cable & Wireless Internet Services Inc. subsidiary in Santa Clara, Calif. Nixon is also a member of the disaster recovery workgroup for the U.S. Office of Homeland Security.

Just like other disaster recovery plans, a cyberattack recovery policy should identify the most critical information resources and the technologies housing them, develop backup policies for those resources, assign a disaster response team and then rehearse, which is what gaming exercises are all about, says Nixon.

"Poor moments of exercising bad judgment are when things fall apart," says Thornton May, corporate futurist at Guardent Inc. in Waltham, Mass., who helped organize simulations for the Sector 5 Summit, a cyberterrorism preparedness conference held in Washington last month. Soon, such preparedness will be mandatory in industries that are deemed most critical for the continued operation of the U.S. economy and vital services, says May, a *Computerworld* columnist.

"The ability to execute will be a big part of corporate accountability in this post-9/11, environment," May says. "Simulating information security scenarios is a practical tool that managers can use for making strategic security decisions in real-world scenarios."

CYBERATTACK RESOURCES

Visit our Web site for links to more information about cyberattacks and how to prepare for them:

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Radcliff is a freelance writer in Northern California. Contact her at derad@aol.com.

Crafting a Response Plan

The best defense against cyberterrorism is a good offense, says Kevin Nixon, chief security officer at Exodus. That means getting buy-in from management, assessing risk, and overseeing security and risk management processes, authentication, auditing, physical security and user security policies. But you still need a response plan. He suggests the following:

GATHER THE FACTS: Interview business unit managers to learn about key corporate services and information that must remain available in an emergency. Remember mundane things like the number of pencils needed should the accounting system go down.

SET UP A TEAM: Typical teams include the vice president, executive communications manager, IT manager and legal counsel.

ESTABLISH A REPORTING PLAN: Typically, the IT manager reports to the internal disaster recovery team. But there are also outside organizations with which the IT manager needs to cross-coordinate. These may include the IT manager at an energy company, and the Washington-based National Infrastructure Protection Center (*www.nipc.gov*). Reporting-structure plans should include items like diagrams or lists showing whom a call goes to if the primary point of contact is unavailable, and the chain of command.

REHEARSE: Practice once a year on a grand scale and more frequently at the departmental level.

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Acts of God And Vendors

Beware of *force majeure* clauses in IT contracts – they can leave your firm in the lurch. By Kathleen Melymuka

SINCE THE COLLAPSE of the World Trade Center, a new word has begun to appear in IT contracts. Vendors have been adding the word *terrorism* to the list of events that can trigger *force majeure* clauses in IT product and service contracts. This might not be a problem for you; the chances of terrorism interfering with your software implementation may be slight. But this new addition to *force majeure* clauses is an opportunity for you to more closely consider these often-overlooked clauses.

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Force majeure, a French term meaning "major force," refers to wording in many contracts — IT and non-IT — that stipulates that a vendor's failure to perform isn't a breach of contract if it results from a cause beyond the vendor's control.

Force majeure has traditionally referred to "acts of God," such as earthquakes and floods, or uncontrollable events, such as wars and riots. The 1995 Kobe earthquake, for example, kept certain LCD screen suppliers in Japan from fulfilling contractual obligations with customers throughout the world.

Such occurrences have been so rare, however, that user companies have paid little attention to *force majeure*. "It was not uncommon for it to slide through because there were more important issues, like service levels, that users were worried about," says Diana McKenzie, an attorney at Gordon & Glickson LLC, a firm in Chicago that specializes in technology law.

Then came Sept. 11, and suddenly terrorism joined the *force majeure* proviso, causing some IT contract negotiators to take notice. They found that the definition of *force majeure* has been quietly expanding.

"I've seen a lot of creep in the language of that clause," says Maureen Dorney, an attorney at Gray Cary Ware & Freidenrich LLP in Palo Alto, Calif., who negotiates IT contracts. "It's getting broader and broader, which is good if you're a supplier and bad if you're a customer."

Force majeure is no longer limited to acts of God. Words and phrases such as *war, riot, strike, material shortages, civil unrest, labor unrest, fuel shortages* and even *failure of subcontractors to perform* have been added to some contracts, giving vendors legal excuses for nonperformance that attorneys say are over the top. While few companies have yet had major disputes over *force majeure*, some of these new provisions could lead to difficulties in the future.

Users "should not be bearing the risk of the fact that [the vendors] pick a bad subcontractor," says Doug Ey, an attorney at Helms Mulliss & Wicker PLLC in Charlotte, N.C., a firm that has significant experience in technology law. "That is not beyond your control."

Neither are strikes. Last year, Larry Thomas, an IT contract attorney at Thomas & Bonnabeau PA in Minneapolis, negotiated for weeks to get the word *strikes* removed from the *force majeure* triggers on a telecommunications contract for a client, a national health care firm. Thomas prevailed, and the contract was signed with the strike provision excluded. Sure enough, the vendor's employees did strike, causing a delay for other customers, but not for Thomas' client. The vendor was required to complete the project on time, so it subcontracted the work.

Thomas also notes that the increasing use of offshore subcontractors, especially in politically unstable regions such as India and Pakistan, raises the risk that *force majeure* will be invoked. And vague wording can provide excuses even if the vendor isn't directly affected by the *force majeure* trigger, McKenzie warns. "Some of these [terrorist clauses] are so broadly written that vendors can delay today [and] continue the delay as long as war on terrorism continues," she says.

Know Your Needs

Although companies include their legal departments in contract negotiations, IT managers need to be educated about *force majeure* because they may be in a better position to realize which clauses are likely to cause trouble in IT.

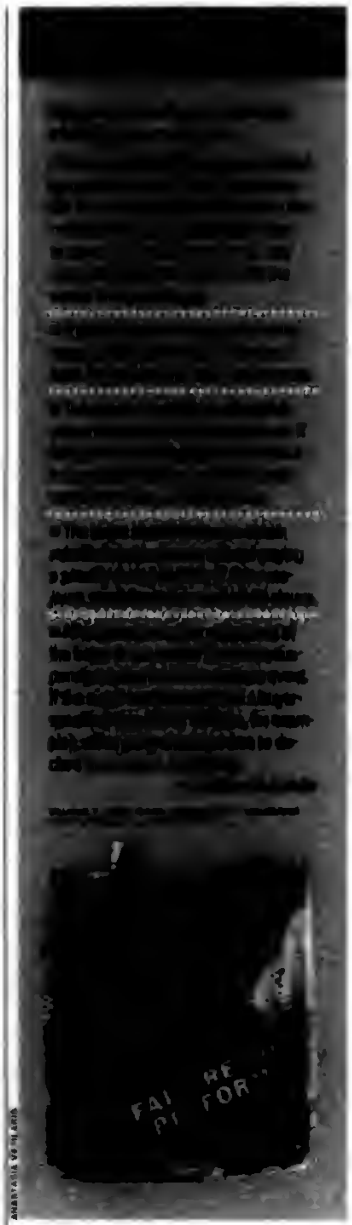
As the buyer, a company can negotiate what is and isn't included as a *force majeure* trigger. In some cases, a company might want to exclude such a provision entirely. For example, *force majeure* clauses have no business being included in disaster recovery contracts, McKenzie says. Otherwise, the same disaster that triggers the recovery service can trigger the vendor's excuse for nonperformance. "*Force majeure* is a negotiated provision," McKenzie says. "It doesn't have to be in the contract."

That also goes for deals involving critical computer systems like those for patient care or point of sale that simply can't be delayed by vendor nonperformance. If that's the case and the vendor says it can't live without *force majeure*, find another vendor, McKenzie says.

There are more potential difficulties in these clauses. Some provisos, for example, say the buyer can't terminate the contract during a *force majeure* event, regardless of the event's duration, yet still require the buyer to continue payments even though services have ceased. Even if the contract does allow a buyer to terminate, the company may be hamstrung by confidentiality agreements that prohibit third-party access to vendor products already in place, says F. Elgin Ward, an attorney and senior consultant at International Computer Negotiations Inc., an IT procurement consultancy in Winter Park, Fla.

There are many ways a company can protect itself, but picking the right vendor should be the first. Be sure the vendor has done what it can to assure that *force majeure* will never be invoked. For example, does the vendor subcontract in trouble spots around the word? Is it dependent on sole-source suppliers? Are its finances and labor relations stable? Does it have multiple sites? Does it have a good disaster recovery plan?

"If the vendor's disaster planning is a *force majeure* clause, it doesn't have very good disaster planning," Ey says. "Know who you're dealing with. It's due diligence." ◗



Melymuka is a Computerworld *contributing writer. Contact her at kmelymuka@earthlink.net.*

Think of it as an engine for your network.

(A souped-up, highly customized,
street-racing engine for your network.)

Gateway

XE

Economy Caps Security Spending

Even with flat budgets, companies are taking business continuity into their own hands. By Thomas Hoffman

SEPTEMBER 11 IT Responds

AS TRAGIC AS THEY WERE, the Sept. 11 attacks were only a temporary wake-up call to slumbering CEOs who still don't seem to be convinced of the need to open up the corporate coffers and invest more in IT security.

Though the federal government has doubled IT security spending within most agencies this fiscal year, the worsening economy and resulting IT budget cutbacks have conspired to keep increases for corporate IT security spending to a minimum. Average security spending has risen by just $200,000 per organization this year to an average of $3.9 million, according to the ninth annual *Network World* 500 survey released in May. Five hundred networking IT executives at companies with 1,000 or more employees took part in the study.

"Until there is an *Exxon Valdez*, until there is an obvious security breach that badly damages a company's reputation, there probably won't be a big push" to increase IT security spending, says Cathy Hotka, vice president of IT at the National Retail Federation in Washington.

But a combination of events since the attacks, among them a perceived over-reliance on third-party service providers such as Comdisco Inc., has led many organizations to re-evaluate their business continuity strategies.

Like many other CIOs, Roy Swackhamer at CNF Inc. says that his Palo Alto, Calif.-based company had standard practices in place prior to Sept. 11. Surveillance cameras, identification badges and security personnel patrolling multiple facilities were used, along with IT-specific security systems for the company's Windows NT and Internet systems. So while IT spending has remained flat, Swackhamer says the $4.9 billion provider of global supply chain services has put aside a portion of its IT budget to build an emergency operations center about 25 miles away from its main campus in Portland, Ore., in case of an isolated disaster, such as a power outage or fire.

The reason? After Sept. 11, business continuity providers such as Rosemont, Ill.-based Comdisco and Wayne, Pa.-based SunGard Data Systems Inc. were inundated with more disaster declarations than they could handle, says Swackhamer. "That's what the senior executives really stood up and took notice of," he adds.

A spokeswoman for SunGard dismissed claims that the service provider was "overwhelmed" with disaster declarations after the Sept. 11 attacks. "Neither SunGard nor Comdisco [Availability Solutions unit, which SunGard acquired in November 2001] had those problems," the spokeswoman said.

SunGard estimates that it used just 10% to 15% of its legacy systems capacity following Sept. 11. But SunGard officials acknowledged that end-user seats for its Jersey City, N.J., facility were "fully utilized," with overflow directed to its Philadelphia site, where more than 100 end-user seats were left unused.

CNF is also in discussions with another Portland-area Fortune 500 business about creating a reciprocal agreement, whereby if one of the firms suffers a fire or a facility-specific disaster, it can move people and operations to the other company's facilities, says Swackhamer. The two firms are also discussing the possibility of building a joint facility to handle the relocation of people and systems in the event of a regional disaster, he says.

Hole in the Middle

Other IT executives are making similar evaluations. For instance, Eastman Chemical Corp. built a secondary technology center 25 miles from its Kingsport, Tenn., data center that went live in March, says CIO Jerry Hale. The decision to build the backup center was made prior to Sept. 11. Eastman Chemical had determined that its IT systems had grown too complex to receive and process electronic customer orders in under three or four days with the mainframe and distributed computing disaster recovery providers it had been working with, says Hale.

"Post-9/11, one of the things we recognized is that we needed to have more of a pragmatic view toward disaster recovery," says Frank Hood, vice president of information services at Krispy Kreme Doughnut Corp. in Winston-Salem, N.C.

At the time of the attacks, the $621.7 million company was scheduled to test its business continuity preparedness at a SunGard site in New Jersey. But because the vendor had to field so many disaster declarations from New York-area companies after the attacks, Krispy Kreme had to conduct testing at a SunGard facility in Chicago.

Hood says he understood the situation, but the switch made him reconsider his options. "For a company like Krispy Kreme, time is money, and even if you can minimize your downtime by a few hours and control your own destiny, that's the better route to take," he explains.

Since then, Krispy Kreme has co-located Wintel-based Hewlett-Packard Co. e-mail file servers at a new manufacturing facility in Effingham, Ill., to ensure redundancy of e-mail, in case a link is broken at its headquarters in Winston-Salem. While Krispy Kreme intends to honor its contract with SunGard for its remaining 12 to 15 months, the company plans to shift its backup processing to Effingham once the contract ends, says Hood.

Although funding for vulnerability assessments on Krispy Kreme's Internet and intranet systems was proposed before Sept. 11, the attacks helped secure the investment with board members in November, thus increasing Krispy Kreme's annual IT security spending from about $15,000 to $20,000 to about $50,000.

But a year after 9/11, will IT security spending get enough of an extra punch? CEOs "can relate to physical security, they can relate to a break-in, but they're not aware of what data security means to their companies," Hotka says.

SECURITY PATCH WORK

Many CIOs are finding that the large number of patches issued by software vendors are taxing their resources.

QuickLink 32315
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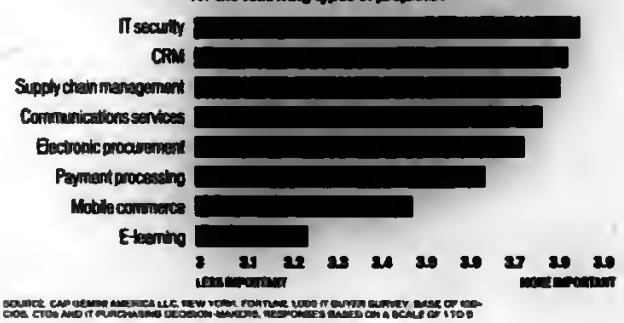
Justifying IT Security Spending

How important is financial justification for securing internal funding for the following types of projects?



SOURCE: CAP GEMINI AMERICA LLC, NEW YORK; FORTUNE 1,000 IT BUYER SURVEY; BASE OF 600 CIOS, CTOS AND IT PURCHASING DECISION-MAKERS; RESPONSES BASED ON A SCALE OF 1 TO 5

Economy Caps Security Spending

Even with flat budgets, companies are taking business continuity into their own hands. By Thomas Hoffman

As tragic as they were, the Sept. 11 attacks were only a temporary wake-up call to slumbering CEOs who still don't seem to be convinced of the need to open up the corporate coffers and invest more in IT security.

Though the federal government has doubled IT security spending within most agencies this fiscal year, the worsening economy and resulting IT budget cutbacks have conspired to keep increases for corporate IT security spending to a minimum. Average security spending has risen by just $200,000 per organization this year to an average of $3.9 million, according to the ninth annual *Network World* 500 survey released in May. Five hundred networking IT executives at companies with 1,000 or more employees took part in the study.

"Until there is an *Exxon Valdez*, until there is an obvious security breach that badly damages a company's reputation, there probably won't be a big push" to increase IT security spending, says Cathy Hotka, vice president of IT at the National Retail Federation in Washington.

But a combination of events since the attacks, among them a perceived over-reliance on third-party service providers such as Comdisco Inc., has led many organizations to re-evaluate their business continuity strategies.

Like many other CIOs, Roy Swackhamer at CNF Inc. says that his Palo Alto, Calif.-based company had standard practices in place prior to Sept. 11. Surveillance cameras, identification badges and security personnel patrolling multiple facilities were used, along with IT-specific security systems for the company's Windows NT and Internet systems. So while IT spending has remained flat, Swackhamer says the $4.9 billion provider of global supply chain services has put aside a portion of its IT budget to build an emergency operations center about 25 miles away from its main campus in Portland, Ore., in case of an isolated disaster, such as a power outage or fire.

SEPTEMBER 11

The reason? After Sept. 11, business continuity providers such as Rosemont, Ill.-based Comdisco and Wayne, Pa.-based SunGard Data Systems Inc. were inundated with more disaster declarations than they could handle, says Swackhamer. "That's what the senior executives really stood up and took notice of," he adds.

A spokeswoman for SunGard dismissed claims that the service provider was "overwhelmed" with disaster declarations after the Sept. 11 attacks. "Neither SunGard nor Comdisco [Availability Solutions unit, which SunGard acquired in November 2001] had those problems," the spokeswoman said.

SunGard estimates that it used just 10% to 15% of its legacy systems capacity following Sept. 11. But SunGard officials acknowledged that end-user seats for its Jersey City, N.J., facility were "fully utilized," with overflow directed to its Philadelphia site, where more than 100 end-user seats were left unused.

CNF is also in discussions with another Portland-area Fortune 500 business about creating a reciprocal agreement, whereby if one of the firms suffers a fire or a facility-specific disaster, it can move people and operations to the other company's facilities, says Swackhamer. The two firms are also discussing the possibility of building a joint facility to handle the relocation of people and systems in the event of a regional disaster, he says.

Hole in the Middle

Other IT executives are making similar evaluations. For instance, Eastman Chemical Corp. built a secondary technology center 25 miles from its Kingsport, Tenn., data center that went live in March, says CIO Jerry Hale. The decision to build the backup center was made prior to Sept. 11. Eastman Chemical had determined that its IT systems had grown too complex to receive and process electronic customer orders in under three or four days with the mainframe and distributed computing disaster recovery providers it had been working with, says Hale.

"Post-9/11, one of the things we recognized is that we needed to have more of a pragmatic view toward disaster recovery," says Frank Hood, vice president of information services at Krispy Kreme Doughnut Corp. in Winston-Salem, N.C.

At the time of the attacks, the $621.7 million company was scheduled to test its business continuity preparedness at a SunGard site in New Jersey. But because the vendor had to field so many disaster declarations from New York-area companies after the attacks, Krispy Kreme had to conduct testing at a SunGard facility in Chicago.

Hood says he understood the situation, but the switch made him reconsider his options. "For a company like Krispy Kreme, time is money, and even if you can minimize your downtime by a few hours and control your own destiny, that's the better route to take," he explains.

Since then, Krispy Kreme has co-located Wintel-based Hewlett-Packard Co. e-mail file servers at a new manufacturing facility in Effingham, Ill., to ensure redundancy of e-mail, in case a link is broken at its headquarters in Winston-Salem. While Krispy Kreme intends to honor its contract with SunGard for its remaining 12 to 15 months, the company plans to shift its backup processing to Effingham once the contract ends, says Hood.

Although funding for vulnerability assessments on Krispy Kreme's Internet and intranet systems was proposed before Sept. 11, the attacks helped secure the investment with board members in November, thus increasing Krispy Kreme's annual IT security spending from about $15,000 to $20,000 to about $50,000.

But a year after 9/11, will IT security spending get enough of an extra punch? CEOs "can relate to physical security, they can relate to a break-in, but they're not aware of what data security means to their companies," Hotka says.

SECURITY PATCH WORK

Many CIOs are finding that the large number of patches issued by software vendors are taxing their resources.

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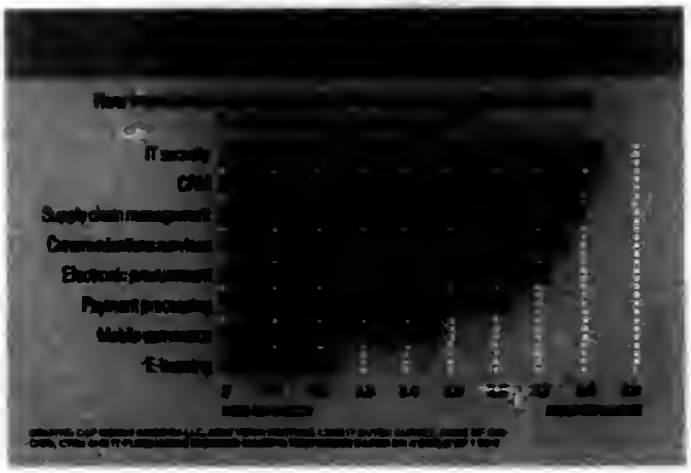

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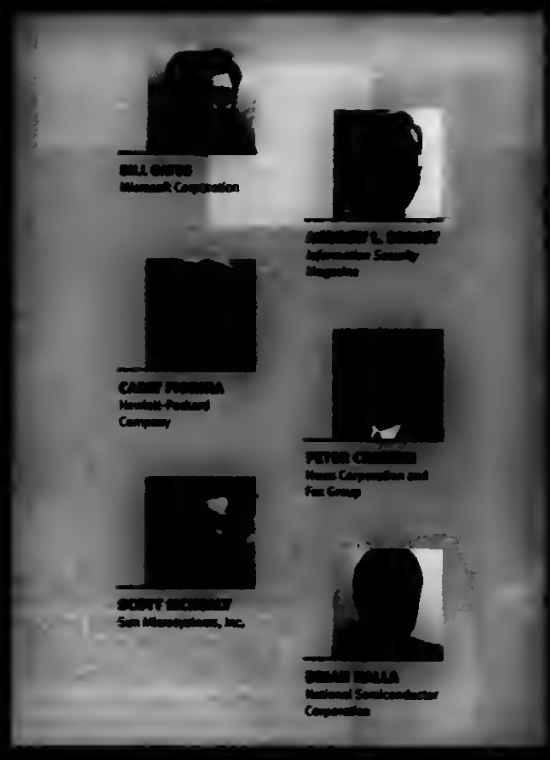

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Q&A

So begins **William Ulrich**'s *latest book,* Legacy Systems: Transformation Strategies *(Prentice Hall PTR, 2002). The book, Ulrich's third on the subject, provides a step-by-step guide for incorporating critical data and functionality locked in legacy applications into newer, Web-based systems. It also lays out detailed deployment options for implementation teams. Even before all the uproar over Y2k, Ulrich, president of Tactical Strategy Group Inc. in Soquel, Calif., and a former* Computerworld *columnist, was an ardent evangelist about the need for companies to first inventory and then integrate their legacy applications. He talked about the issue recently with* Computerworld*'s Julia King.*

If legacy systems are so important, what's holding companies back from consolidating and transforming them for use via the Web? The first challenge is understanding what these systems do and how they relate back to the business. A lot of these systems support a cross-functional activity across the enterprise.

When you need to invoke a change or retool a function that flows across organizational boundaries, you don't know what's impacted. What results is an extended delay.

Didn't companies gather most of this information during their Y2k projects? The irony of it all is that many organizations spent anywhere from $10 million to $50 million to $100 million on Y2k projects. They spent all this money stabilizing their legacy systems without deriving any value other than keeping them running. Some of the

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Continued from page 50

other benefits they could have derived, they didn't. They had an inventory of all systems, all applications and interfaces to all systems in one repository. But then, instead of taking that and building upoo it, they took those inventories and shoved them oo a shelf or deleted them and took the people who worked on them and seot them out to pasture, and we lost all the intelligence that was derived from that Y2k window.

What should companies be doing? There should be a strategy behind how organizations as a whole are going to address their legacy issues, so each time an issue comes up it doesn't become a fire drill in one more quick-fix approach. Understand your systems at a macro level. Know what systems support which users and which customers.

How much, if at all, is a lack of mainframe skills a factor in this whole issue? I believe it's more a lack of understanding of what needs to be done and how to approach it. I get e-mails all the time from people with mainframe skills who are available to do work. I don't think we're lacking the technical skills. I think right now we're lacking the executive leadership to undertake these initiatives.

But money talks. Is there not a compelling business reason for companies to launch those legacy integration or transformation projects, as you call them? If there's a situation where multiple business units are doing the same things and they're supported by multiple redundant systems, there's a huge savings to be had. Once you understand this issue, you can start to see the [problems it causes] in your day day-to-day life. For example, I had a long-distance telephone service provider call me six times trying to flush out a problem in my account. Six people from the company told me this problem was in their database, and each time I'd give them a confirmation code, none of them could check that confirmation code against their system. All were working in the same company, but they were working with six different databases with wrong information about my account. This same organization talks about cutting costs and getting rid of its IT people. The way to cut costs is to consolidate databases and get rid of five of the six people who called me.

What can IT managers be doing to address this legacy issue, if, as you say, the decision-making power is in the hands of CEOs and chief financial officers? The IT managers are pretty smart about this topic, but they aren't going to put their job on the line to bring this issue to a head. The IT manager does continue to wave a flag, though. Try to be articulate about what needs to be accomplished. Walk into senior management with variations on approaches that impact the underlying architecture. Take a look at benefits that can be derived along with the costs. ▶

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Dear Career Adviser:

I'm a systems administrator with 20 years of experience, mainly on the AS/400 platform. In addition to my administration duties, I program in both Cobol and RPG IV. What new skills do I need to keep pace with the market and enhance my chances for advancement?

— ANN ARBOR ALICE

Dear Alice:

You should consider adding Linux to your base of expertise, according to Adam Jollans, manager of IBM's Somers, N.Y.-based Worldwide Linux Marketing Strategy Software Group.

Hardware, software and database vendors such as IBM, Sun Microsystems Inc., Hewlett-Packard Co. and Oracle Corp., as well as government and commercial end users, are moving at least part of their operations over to Linux as a way of reducing costs and expanding vendor relationships from working with just one to taking an open-source approach.

"IBM invested $1 billion and has nearly recouped that investment, completing 4,600 customer engagements and reaping 300 customer references," notes Jollans.

Should this sort of move be appealing to you, first visit *www.ibm.com/servers/eserver/iseries/linux/*, since IBM's eServer iSeries platform (formerly the AS/400) now supports Linux. Then go for certifications from the Brampton, Ontario-based Linux Professional Institute (*www.lpi.org*) or Raleigh, N.C.-based Red Hat Inc.

These are especially good strategies because it will allow you to acquire the knowledge and get yourself started in an area that puts you somewhat ahead of the curve.

"Linux skills around IBM, HP and Sun are very portable," says Jollans.

Finally, you should understand that while moving down this new path will certainly be stimulating, it isn't entirely risk-free, and it's best to have a suite of in-depth technical skills that all build on one another.

People who have backgrounds in Linux, Microsoft, Cisco, DB2 or Oracle — with experience in application infrastructure, network topology and databases — can make six figures, even in the current economic environment.

For a look at the merits of a Red Hat certification vs. a vendor-neutral one from the Linux Professional Institute, check out a recent salary survey from *Computer Reseller News* on the Web at *www.crn.com/sections/special/ssurvey/ssurvey02.asp?ArticleID=35952*.

Dear Career Adviser:

I have a degree in computer science and have worked in the video game field. I have about four years of experience in Web development, but I would like to work in other markets.

— GROWING UP

Dear Growing:

Your background is perfect for developing "immersive" interactive virtual reality platforms and systems, says Lance Loesberg, executive vice president of VirTra Systems Inc. in Arlington, Texas. You will want to show that you can integrate a variety of devices that accommodate tracking capabilities and develop a 360-degree world. This may involve using artificial intelligence, computer graphics, sound or 3-D tools.

WORKSTYLES

IT Helps Carlson Build Relationships

What are the most critical systems supported by your department? "Our company designs and executes relationship marketing programs that allow our customers to build better relationships with consumers, partners or their employees. My group develops and supports the database and applications used to automate various aspects of those programs. We support close to 75 custom applications for various clients at any given time. An example might be a consumer loyalty program, such as a frequent-flier program.

"Our business operations staff loads all the consumer activity onto the system, which at the end of the month generates the reports and sends out statements to all the program participants. There's a back-office piece of the system that our own internal operations staff uses and a client-facing piece that is viewable through the Web."

How would you describe the pace of the work? "It's steady. We've been very busy this year, and the challenge is time to market. The time from idea to execution is very short. Clients don't want to wait months to launch a new marketing campaign."

How would you describe the overall IT culture at your company? "We do have our own identity as a group, and yet we are very aligned with the business. For instance, all the IT leaders report up to the respective general managers. And all of our IT people are co-located with operations and administrative people who use the system. When we have client meetings, IT is typically brought into those meetings. They know technology is a major component of the value we bring to the client program, and they want our input.

"We have a day care on campus, flextime, and we provide laptops and virtual private network connectivity for people who need to work at home.

What do you like best about how career advancement and training are handled at your company? "We have an employee task force within the IT organization, and three years ago, the group came up with a suggestion to offer an on-site master's of software engineering program for people who might be interested in getting an advanced degree. We worked it out with the University of St. Thomas, and we not only offer it, but the company pays for it.

"Our first 24 people are graduating in December, and we've got another group of about 20 halfway through."

What do you think makes your company's IT department unique? "People get the opportunity to work directly with clients of the company. We work in small teams, so you also get exposed to all aspects of the software development life cycle early in your career."

Carlson Marketing Group

Interviewee: Bob Keller, senior director of IT

Type of business: An operating group of Minneapolis-based Carlson Cos., a relationship marketing company that designs marketing solutions such as performance improvement and consumer loyalty programs.

Number of IT employees: 150 in the U.S.; nearly 300 worldwide

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Unix System Administrator for many flavors of Unix incl. Compaq Tru64 Unix, Sun/Solaris & Linux. Maintain hi/wire mgd for all flavors of Unix servers & workstations. Provide & maintain developmental & teaching tools & utilities needed to support academic computing. Maintain Directory, Email & Web svcs needed for admin computing. Other responsibilities incl. s/ware installation/upgrades, documentation dvlpmt, performance tuning, backup & recovery, troubleshooting & consulting w/vendors & developers, capacity planning, configuration mgmt, user support. Will work closely w/network administrators, Helpdesk staff & campus faculty/staff. Responsible for day-to-day maintenance & backup of all systems & applics. Coord student technicians in processing of new accts & user system accesses/security. Reqs demonstrated ability to manage file system & support educational community. Bach in Comp Sci & 2 yrs exp specific to position reqd. Must be well versed in Unix shell scripting, C/C++, Perl, TCP/IP & client/server N/work Svcs: DHCP, DNS, Sendmail, NFS, NIS, Radius, FTP, Web & MS Office. Knowl of WinNT &/or VAX VMS, LDAP (Oracle, Cisco routers) a+. Qualified persons should send R of application, current v&s & 3 refs to Diana Cadley, HR Dept, Ref#967, Ramapo College of NJ, 505 Ramapo Valley Rd, Mahwah, NJ 07430-1680 or email: dcadley@ramapo.edu

HRMS Customization Software Engineer- Cordova, Tennessee. Part of a team responsible for the analysis, design & customization /modification of PeopleSoft HRMS system in an Oracle & UNIX environment. Will utilize PeopleSoft version & technologies including PeopleTools, Application Engine & SQR to customize &/or write batch processes. Must have a BS degree or equivalent with major field of study in Comp. Sci, Engineering or related field. Must have 3 yrs of exp. in the job offered or 3 yrs of exp. in a position involving PeopleSoft HRMS customization/modification in an Oracle & Unix environment. Exp. mentioned may have been obtained concurrently & must include 2 yrs of exp working with PeopleSoft version 6 including 1 year of exp. each in PeopleTools, Application Engine & SQR. Must have legal authority to work in U.S. Please send resume to S. Muhammad, Union Planters Corporation, 7130 Goodlett Farms Parkway, Cordova, TN 38018

Senior Software Engineer – analyze, design, develop, test & implement eGovernment applications/products using knowledge of & exp. w/ ROBMS (Oracle, MS SQL Server); Unix Shell Script, Unix Utilities (lex, yacc, awk); Java, JavaScripts, Java Swing, JDBC; Pro*C, C++, C, Unix (Sun Solaris) & Windows 2000/NT; manage on-site & remote development teams. Requires: Web & Application server use & maintenance exp.; BS (or MS) in computer science or information systems + 7 YR related exp. (5 YR w/ MS); atleast 2 YR exp. in eGovernment applications. Interested candidates e mail resumes to brashing@recuse.com

Software Engineer Needed to develop middle-ware components for real-time management and testing of various network devices utilizing a common platform to manage CDMA, TDMA, GSM and other environments. MS to C. Science or related field & programming experience to Java, XML, CORBA, Visibroker required. Send resumes/salary history to: Alexander Gavrilov, SoftTrend, Inc., 6160 N. Cicero, Suite 124, Chicago, IL 60646

Principal Software Engineer will design, develop and maintain software using COM/DCOM on NT/2000 platform for middle-tier of a 3-tier architecture for Company's Fixed Income division. Will deploy and administer components, written with programming languages (Java, C++, Visual C++, Visual Basic, C#) under application servers MTS and COM+. Will use JDBC/OLEDB for accessing data from database (Sybase and AS400). Will also write ASP pages, using VB Script and Java Script and deploy them under IIS. Requires Bachelor's or equivalent in Computer Science, Engineering, Mathematics, Business, Statistics, or Physics, plus five (5) years experience in Job Offered OR five (5) years experience in 3-tier client/server architecture OR Master's or equivalent in Computer Science Engineering, Mathematics, Business, Statistics, or Physics, plus three (3) years experience in Job Offered OR three (3) years experience in 3-tier client/server architecture. Candidate must also possess demonstrated expertise developing and deploying Middleware using COM, DCOM, MTS and COM+, demonstrated expertise programming in Java, C++, and Visual Basic, and demonstrated expertise programming Sybase connectivity. Salary: $75,700/yr, M-F 9AM-5PM. Send 2 resumes to Case #2002-402, P.O. Box 989, Concord, NH 03302-0989. EOE. Applicants must be U.S. workers eligible to accept full-time employment in U.S.

COMFORCE Information Technologies, a leading technical staffing company currently seeks applicants for the following positions in its Duluth offices: Senior Systems Analyst. Applicants for this position must have a bachelor's in computer science, engineering, or related field plus five years of experience in programming and coding with PL/SQL and SQL Server to include three years experience programming and coding with HTML, Java and JavaScripts. For consideration please forward your resume and letter of interest by mail to: COMFORCE Information Technologies, Resource Manager, 6470 East Johns Crossing, Suite 170, Duluth, GA 30097. Do not email resumes. EOE

Systems Administrator II, Senior Standard & Poor's is seeking resumes for the position of Senior Systems Administrator II to work in Englewood, CO. This position acts as a technical advisor on the administration of an enterprise production UNIX environment consisting of networked servers and workstations. Is responsible for hardware software, operating systems configuration planning, installation, maintenance technical support, capacity and performance monitoring, disk optimization, file system integrity, system tuning, and troubleshooting. Designs systems and oversees installation of hardware and software. Provides technical support to staff. Manages system security and systems resources. Conducts evaluations and recommends software and hardware products. Ensures creation and implementation of system backup and recovery. Designs, programs, and implements system utilities and scripts. Establishes and enforces standards. Serves as project manager. Approves decisions, delegates responsibilities, assigns tasks, and supervises other system administrators and technical support personnel.
Minimum requirements: bachelors degree in computer science, information systems, engineering, or related field, including economics; three years of experience in systems administration, and comprehensive working knowledge of UNIX Solaris operating system, a wide variety of third-party tools, communication protocols, and a broad knowledge of computer systems hardware, software, operating systems, and utilities.
Please send resumes by mail to Kathy Slaback, Job Reference No. DW62002, 7400 S. Alton Court, Englewood, CO 80112. Standard & Poor's is an equal opportunity employer

PS Info Tech, LLC, a Colorado Springs, Colorado, software development and consulting company, seeks applications for the position of Programmer/Analyst. Engage in full-life cycle software development in an IBM mainframe environment. Use COBOL, REXX, and C programming language, SAS reporting language, CICS, GUIs, JCL, CA-7 and CSP development tools, and other languages and tools in the development and consulting process. The position which is located in Colorado Springs, requires a bachelor's degree or foreign equivalent in computer science, engineering, or a related field, including mechanical engineering, two years of software development experience in an IBM mainframe environment, and working knowledge of CSP, CA-7, SAS, and C programming language. Please send resumes by mail to PS Info Tech, LLC, 5152 Prairie Grass Lane, Colorado Springs, CO 80922

Analyst: The Trane Company, a manufacturing and sales company is seeking a Lead Development Analyst to analyze company financial service operations and existing Risk Management Systems in its La Crosse Wisconsin office. Qualified candidates must have a Bachelor's Degree in Computer Science or least 5 years experience as a Software Systems Engineer or Programmer Analyst, extensive experience with PowerBuilder PowerBuilder Foundation Class and Power Tool, 3 years experience with application development using Oracle, and 2 years experience working with construction industry risk management practices. Interested applicants should mail resumes and salary requirements to Ms. Kathy Reynolds, Ref. # ML1000 to 3600 Pammel Creek Road, 17-2, La Crosse, Wisconsin 54601. An equal opportunity employer.

Sr. Site Research Analyst wanted to research and develop complex world-wide web servers. Bachelor's degree in Computer Science and 3 years experience required. Send resume to Ydeo, Inc. 3600 Bridge Parkway, #200, Redwood Shores, CA 94065.

Software Engineers (Idaho Falls). Design, develop, test and implement specialized multi-country, multi-site, ERP and CRM applications in JD Edwards One World XE and related tools, XML, VB, SQL, and Windows NT. MS, Sc./Engg and 3 yrs. exp in job offered or BS Sc./Engg and 5 yrs progressive post baccalaureate exp reqd. (or foreign equiv.) Prevailing wage/benefits. Melaleuca Inc. Attn: Human Resources, 3910 South Yellowstone Highway, Idaho Falls, Idaho 83402. No phone calls please. EOE.

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Requires BSCS or equiv.

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Analyst (network systems & data communications) - perform analysis, design, testing, evaluation etc. of LAN/WAN & other systems. Research & recommend proper hard-/software to users. Maintain, troubleshoot & assist users w/ programs & implementations. Resolve technical issues. Coordinate overseas offices w/ user requirements, design, develop & solutions. Requires: BS-Computer Science (or equivalency); Microsoft Technologies Certification; 2yrs exp in computer software solution development. $39K/yr (40hrs/wk). Apply with CV to: Sri Vepa, Systems Hardware Inc. 661 Brea Canyon Road, Suite 5, Walnut, CA 91789

SAP H.R. APPLICATIONS CONSULTANT 8am-5pm, Research, develop and design computer software systems as they relate to HR management functions such as payroll, benefits and time management. Required: proficiency with SAP HR and SAP ABAP/4, ASAP Cert. B.S. in IT or related field or equiv. Cedar Inc., Send Resume: glenda.soderstrom@cedar.com or fax: (410) 752-2879

Programmer/Analyst (Newark, DE)-Analyze, design, program & implement advanced comp. applications for Web Based Drug Tracking Systems using program devplmt tools. Define req., test & implement systems. Req. Bachelors in Comp. Sci., Technology, Pharmacy, MIS, Statistics or Engg (any field) plus 1 year exp. in job offered. Contact: International Systems Technologies Inc. 1812 Front Street, Scotch Plains, NJ 07076.

Manager Software Developer sought by NJ based Securities Dealer. Must possess Bachelor's degree or equivalent in Computer Science or directly related field and 5 years exp. in software/systems development and design. Respond to: Human Resources Department: Knight Trading Group, Inc., 528 Washington Blvd., Jersey City, NJ 07310

Programmer Responsible for software project's requirement collecting & analysis, preliminary and detailed design, coding, testing, writing documents and on-site implementation, user support and further improvement in cable industry. Plan, manage and track the schedule of whole development cycle and analyze the feasibility of project. Provide consultation to user and development staff. Req. BS or equivalent in CS or CIS with nine months exp. in job offered or programmer analyst. Must be proficient in CIS Management System, EID, Reader, Visual Studio.NET, XML and RationalRose. $52,000.00/yr, 40hrs, 9-5. Send resume to LOR, Inc. or wtam@rmassociates.com.

Programmer Analysts needed. Seeking qualified candidates possessing BS or equiv. and/or rel. work experience. Duties include: Designing programs to merge, purge maintain and integrate databases, designing, developing and maintaining company website; providing technical support for customers and creating front-end user applications. Exp. must include two years working with Visual Basic, MS Access and Crystal Reports. Mail res. ref. and sal. req. to: DataLister Inc., 1595 NW 1st Court, Boca Raton, FL 33432.

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Database Administrators needed: Several senior level positions available for qualified candidates possessing relevant work experience. Part of the relevant work experience must include 2 years working with Peach Tree. Duties include customizing, implementing and deploying various software programs, Setting-up, monitoring, maintaining and troubleshooting databases. Work with 2 of the following: Peach Tree, Oracle, FoxPro and Windows NT Mail resume, references and salary requirements to: AMG Stars Inc., 4350 S. Halsted, Chicago, IL 60609

Programmers Jr. Programmers, Software Engineers. Design, develop, test and implement specialized applications in (1) COBOL 78 & 85, DMSII, Dargal, BI Source, BLDIST, BLSched, ICD, Tads, MS Access, DB2 Cics, People Tools and SQL; (2) Oracle 8i, MS Access, C, C++, Java, VB, Arc Info, Visio, FM, MapInfo, Dream Viewer, Benchmarking, Six Sigma and SQC Tools; (3) Sybase, Java, C++, COBOL, CORBA, Visibroker, MQ Series, Rational Rose, BEA Weblogic, and IBM Websphere. Prevailing wage/benefits. Send resume to Attn: Raja Narreddy, Quantum Infotech, Inc., 30600 Telegraph Road, Ste 2220, Bingham Farms, MI 48025. EOE.

Need Programmer Analysts, Sr. Programmer Analysts, Software engineers, DBAs, Tech Market Analysts, Budget Analysts, QA Analysts. Experience sought in SAP, VB, Java, ASP, Database Administration, Peoplesoft, Oracle, QA tools and Technical writing. Requirements and Salary vary depending upon position. All positions require a minimum of a Bachelor's degree and experience. Must be willing to travel/relocate if necessary. We offer salary commensurate with skills and a desirable employee benefits package. Please submit a letter of interest and resume to resumes@synoptechnologies.com. Synoptechnologies, Inc.

SOFTWARE ENGINEER: An Internet Solutions Developer for Global Capital Markets is seeking a Software Developer who will design, develop & maintain large scale web-based financial IS for ASP/Service Bureau deployment. Req'd: BS degree in CompSci or related. Min 2 yrs exp in the job or as JAVA Programmer/Developer. Must have delivered & supported multi-tiered real-time web-based client server application serving the financial services industry in an ASP environment. Must have exp. w/JAVA, J2EE, C++, XML, Oracle RDBMS & WinNT technologies. Send resume to: HR, CrossBorder Exchange Corp., 1410 Broadway #2700, NY NY 10018. REF#BM0023. PLS #INDICATE REF#

Software Engineer: Design/ implement healthcare apps in the development of Disease management systems using VB, ASP, VBScript, ADO, XML, COM+, HTML, IIS, SQL Server 7.0/2000, Visual Interdev 6, Visual Source Safe Windows 2000. Prevailing wage/benefits. Send resume to Attn: Marty LeMasurier, Matria Healthcare Inc., 1850 Parkway Place, 12th Floor, Marietta, GA 30067

Software Engineer to analyze, develop, test, implement & maintain customized B2B, B2E, B2C applications in a client/server environment in different platforms (Unix and Windows NT) & databases. Use Web Services, SOAP, XML, JSP, Custom Tags, & Java Servlet according to J2EE spec and C++ implementing object oriented artifacts & design patterns to perform duties. Must have MS in Computer Science plus three years of experience in similar duties. Send resume/cover letter to Adel Sentos, DeepBridge Content Solutions, 61 Broadway, Suite 800, New York, NY 10006.

Software Design Engineer for Miami to design and develop a web based Customer Relation Management (CRM) and financial analysis software localized in Dutch and Afrikaans. Full time position M-F offers good salary. Applicants with 5 years related experience and working knowledge of Microsoft Visual Basic 6, Visual C++, Active Server Pages, DHTML and Java Script, send resumes only to Mario Cabrera, Human Resources, SunGard Insurance Systems, 2000 S. Dixie Hwy., Miami, FL 33133.

Manager 3D Appl. Rsrch Group, wanted for mfgr of computer components. Req. B.S. in E.E. or related scientific discipline plus 5 yrs tech. devlpmt/mgmt exp. in comp. graphics industry. Reply to K.B., H.R. Dept., ATI Research, Inc. 62 Forest St., Marlboro, MA 01752

Forum Systems currently has opportunities in Sandy, UT for the following positions

"Software Engineers (Consultants)"

"Must be available to travel to various and unanticipated worksites throughout the U.S.

Positions require Bachelor's in CS, Engineering, or related field and 3 years of software engineering experience. Experience must include: 1) XML, 2) TCP/IP, 3) Linux and 4) Java

For consideration forward your resume to:
Zak Farrington
Forum Systems
45 West 10000 South
Ste 415
Sandy UT 84070
(No phone calls)
www.forumsys.com

Dir of Development to provide tech leadership to analyze, design, implement appls using Delphi, Java, VB, ERWin on Windows; manage databases using Oracle, DBK, MS Access, SQL; interact with users to gather reqs; review project requests and prioritize; assign direct, manage development team, plan/execute QC policies. Req. MS in CS / Engg (any branch) with 3 yrs exp in job offered or BS or foreign equiv in any of above & 5 yrs of relevant progressive exp. High salary. F/T Resume to HR, Get Proof, Inc., 3050, Royal Blvd South, Ste 195, Alpharetta, GA 30022

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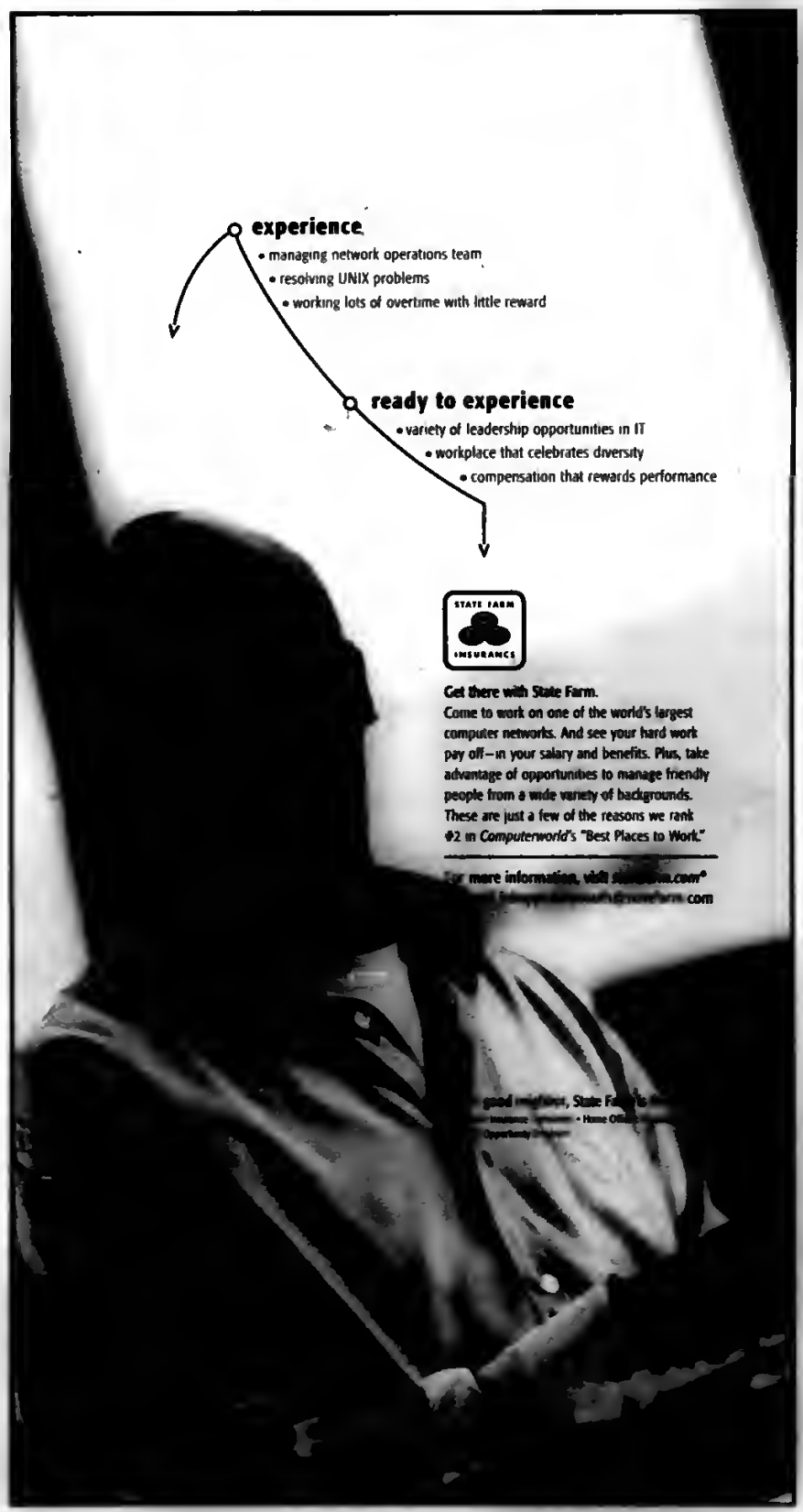

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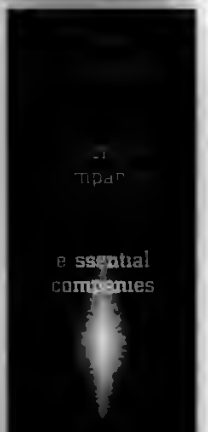

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"Software Engineers (Consultants)"

"Must be available to travel to various and unanticipated worksites throughout the U.S.

Positions require Bachelor's in CS, Engineering, or related field and 3 years of software engineering experience. Experience must include 1) XML, 2) TCP/IP, 3) Linux and 4) Java

For consideration forward your resume to:
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Numann Technologies Inc., an Elk Grove, CA based Software Consulting firm is looking for:

Computer Programmers
UNIX System Administrators
Software Engineers

Must have at least a Bachelor Degree in Computer Science/Mathematics/Physics or equivalent, with at least 3-5 years relevant experience. Must be willing to travel from Elk Grove, CA to temporary worksites throughout the US, to be paid, to least, the prevailing wage in that area. Employee will remain employed by Numann Technologies, Inc. E.O.E.

Fax or mail resume to:
Numann Technologies, Inc.,
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Databased Solutions Inc. has openings for Programmer Analysts with at least four years of experience in programming and quality assurance, including two years of experience in ISO 9000 implementation. Job Duties: Analysis, design, development, testing, customization, documentation, installation and implementation of web based software applications and client /server applications using Novell Visual Basic, TCP/IP, UDP/IP, Oracle, Java, Lotus, PowerBuilder and Cobol. QA testing and implementation using tools such as Rational, Mercury, Silk, Jprobe. Some positions require two years experience with a Bachelors degree or a Masters. Excellent Pay and Benefits. Mail resume to: HR Dept., Databased Solutions Inc., 100 Jersey Avenue, Suite B-201, New Brunswick, New Jersey 08901

Software Engineer. Responsible for the database administration of PeopleSoft general ledger application, provide production support, planning and implementation of production releases, problem determination and resolution, handle performance tuning, backup, recovery and disaster recovery of the database. Requires Bachelors degree in Engineering or Computer Science plus one year experience in the job offered or one year experience in database administration of PeopleSoft general ledger application. Salary $58,400/yr, 40 hrs/wk, 8AM-5PM, Mon-Fri. Job site in Manchester, NH. To apply send two (2) copies of your resume/letter of application to Job Order #2002-398, PO Box 989, Concord, NH 03302-0989

Data Coordinating Specialist I
Boehringer Ingelheim Pharmaceuticals, Inc. has multiple openings in to Ridgefield, Connecticut office for the positions of Data Coordinating Specialist I.

Manages and reviews discrepancy database, recommends solutions leading to resolution of data discrepancies that evolve inclusion of medical data in the database and applies Medical /Data Management policies and procedures for timely processing of product efficacy and safety data.

Must possess to least a bachelor's degree or its equivalent in the Medical or Biological field and relevant experience, including experience with medical terminology, medicine, clinical research and data processing, computer applications on multiple systems and FDA pre-submission for device.

Resume and/or cover letter must reflect each requirement above and specify reference code AD-GCD/GC1102 or it will be rejected.

Forward resume to BI Staffing Center PO Box 534, Waltham, MA 02454. Fax number (781) 663-2431. Email: BIPI@BI-careers.com. EOE

Programmer/Web Developer-Chicago NW suburb, 40 hrs. per wk. 9AM - 5PM. $62,305 per yr. Will design and implement large scale back-end databases for clients using MS SQL Server 7.0. Will develop server side applications using ASP, Visual Basic and VB Script. Will provide front-end web site development using HTML, Java Script, Dreamweaver and Flash. Will provide technical support to clients in the above areas. Must have Bachelor's of Science degree in Computer Engineering, and 1 yr. of exp. in job offered or 2 yrs. exp. as a Computer Programmer. Must have 2 yrs. of exp. with MS SQL Server, Access & database design, 1 yr. exp. with Visual Basic, 6 months exp. with ASP, Java Script, HTML, Adobe Photoshop & Macro media Flash. Applicants must show proof of legal authority to work in U.S. No Calls - Send 2 copies of both resume & cover letter to: Illinois Department of Employment Security, 401 S. State St., 7 North, Chicago, IL 60605. Attn: Leila Jackson. Ref. #V IL 39279-J. An Employer Paid Ad.

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Main phone number (508) 879-0700
All editors unless otherwise noted below
Main fax number (508) 875-8931
24-hour news tip line (508) 620-7716

E-MAIL

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CONTACTING CW EDITORS

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CONTRIBUTING WRITERS

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Siebel and SAP

ware at its Sapphire '02 user conference in Lisbon, Portugal. The opgrade, due to ship at the end of this month, uses SAP's new Web Dynpro presentation-level technology in role-based user interfaces designed to give workers job-specific views of data and make the CRM software easier to use.

John Grozier, group director of CRM product marketing at SAP, said Version 3.1 of mySAP CRM will also be tightly integrated into the company's portal software. That will let end users take data, such as a customer address, from a CRM system and drag and drop the information into other SAP applications, Grozier said.

Denis Pombriant, an analyst at Aberdeen Group Inc. in Boston, said Siebel and SAP are going in somewhat different directions with their new releases. Siebel is focusing on delivering end-to-end business processes to specific vertical industries, he said, while SAP's portal integration capabilities are aimed at easing the integration of front-end CRM applications and back-office systems.

"The way Siebel is going I really believe is the right direction," said Kevin Lathrop, CIO at Unishippers Association Inc., a Salt Lake City-based company whose 300-plus franchisees provide shipping services in the U.S. and the U.K. "One of the reasons we selected Siebel was that they would stay with best practices and build them into the product over time."

Unishippers is beta-testing the partner relationship management application in Siebel 7.5 and plans to go live with the software in the first quarter of next year, Lathrop said. The product will replace home-grown applications, he added.

Lathrop said he's particularly interested in the sales and customer service processes embedded in Siebel 7.5, although he added that it doesn't include any vertical-industry tools developed specifically for transportation companies.

Joanie Rufo, an analyst at AMR Research Inc. in Boston, said Version 3.0 of mySAP CRM, which became available in the third quarter of last year, was SAP's first truly competitive release. And Version 3.1 better positions the company as a rival to San Mateo, Calif.-based Siebel and other CRM vendors such as Oracle Corp. and PeopleSoft Inc. in Pleasanton, Calif., Rufo said.

Barry McGoldrick, director of global application development at Molex Inc. in Lisle Ill., said the maker of electronic components plans to upgrade to Version 3.1 of mySAP CRM early next year.

Molex, which uses SAP's R/3 enterprise resource planning software and Version 2.0 of mySAP CRM, is already testing the new CRM release. McGoldrick said end users at the company have given a thumbs up to the software's ease-of-use improvements. ◗

Siebel Brings App Integration Technology to Forefront

With the release of its Siebel 7.5 upgrade, Siebel Systems is taking more steps to fulfill a promise to simplify business process and application integration work for users through its Universal Application Network (UAN) technology.

UAN, which was announced in April, is designed to make it easier for companies to connect Siebel's CRM applications to homegrown systems and packaged applications developed by other vendors. Usage of the technology is still in its infancy while Siebel, working with partners, continues to develop the specifications.

But Siebel 7.5 includes an embedded set of UAN-based Application Services Interfaces, which expose Siebel's proprietary application processes as Web services. It also comes with support for linking the software to applications based on Java 2 Enterprise Edition or Microsoft Corp.'s .Net technology, according to Siebel.

Kevin Lathrop, CIO at Salt Lake City-based Unishippers, said the UAN interfaces could let customers of its franchisees access data from a variety of systems and check on invoices and the status of shipments regardless of which freight carrier is delivering the goods.

Lathrop said he isn't sure Unishippers will roll out the UAN technology in the near term. But, he added, "I suspect we'll be using it more and more as it supports our future direction."

Tim Arnold, IT manager at Boss Corp. in Framingham, Mass., said UAN should give users a way to easily extract data from Siebel application tables without having to change their structure or the business rules that are built into them.

Boss, which makes audio systems, uses Siebel's CRM tools but has also installed SAP's back-office applications and PeopleSoft's human resources software. Arnold said he hopes to implement some of the UAN technology within his systems by next summer.

Siebel is playing catch-up on integration technology, said Joshua Greenbaum, an analyst at Enterprise Applications Consulting in Daly City, Calif. Users are demanding that CRM applications become more than stand-alone tools and offer integration to other software, such as manufacturing, supply chain management and logistics systems, he added.

Siebel has "to get moving" with UAN or it could risk being overshadowed by SAP and other rivals that are ahead of it in supporting integration with applications other than their own, Greenbaum said.

– *Marc L. Songini*

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Legacy Ties

Siebel's applications and the transaction systems used by Countrywide's business units.

Vigna said it would have been too time-consuming and expensive to tie together all of the customer data stored in the transaction systems to Siebel 7 without the WRQ tools. Most of the transaction systems run on AS/400s, although Countrywide also has a small mainframe installation, he said. Siebel 7 will be installed on Windows 2000 servers.

Mixing New and Old

Tyler McDaniel, an analyst at Hurwitz Group Inc. in Framingham, Mass., said Countrywide's integration challenges are a classic example of the problems faced by companies that need to mix new CRM applications with the systems that are already installed.

"A lot of the systems have been in existence a number of years, and as a result, they're very complex," McDaniel said. "When you try to hook one complex system, like the AS/400, into another complex system, like Siebel, you compound the issue."

Vigna said the plan to produce a single view of customer data is further complicated by the presence of more than a half-dozen customer transaction databases that feed data to end users via 5250 emulation software. In addition, Countrywide uses IBM's Java 2 Enterprise Edition-based WebSphere Application Server software to control an existing series of Web applications.

In an effort to solve the integration conundrum, Countrywide plans to use WRQ's Verastream software to translate customer data stored on the AS/400s into reusable components that can be read by the Siebel 7 applications. Verastream is being installed on centralized component broker servers, according to Vigna

"The Verastream software enables us to create a single interface, and it allows us to do it behind the scenes of our legacy 5250 applications," he said. "And it allows our J2EE components to be served up from a WebSphere environment, Unix or any other environment. That was key for us."

Another problem Countrywide is facing is the fact that many of its Web-based transactions run at near real time, but the applications on its AS/400 servers were designed to be processed in batch mode. Verastream should mitigate that issue by enabling the batch systems to function at real-time speeds, Vigna said.

The first phase of the CRM project involves Countrywide's Balboa Life & Casualty insurance group, which is based in Irvine, Calif. Balboa plans to use Siebel 7 in combination with its existing systems to set up a virtual claims office that's designed to give its workers and customers a Web-enabled view of the insurance claims process.

The plan calls for limited information about insurance policies to be entered into Siebel 7. Then data from Balboa's existing systems will be integrated into the Siebel software via Verastream, and all claims-related transactions will eventually be processed within Siebel 7 ◗

Technology Plan

Countrywide is installing the following software as part of its CRM project:

- The Web-based Siebel 7 CRM suite to integrate customer data from 20 different business units within a single user interface
- WRQ's Verastream Host Integrator and Information Broker tools to turn data in the company's AS/400 systems into reusable components that can be accessed by Siebel 7

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The Faith of IT

I DON'T HAVE ANY COMFORTING LESSONS or politically convenient conclusions on the anniversary of Sept. 11. By now you've probably heard what it all means dozens of times over, from deep thinkers far more confident than I am about what we should do and how we should feel and the best way to commemorate the thousands murdered on that Tuesday morning a year ago.

Sorry, but I don't know how to sum up the deaths of thousands of people in a few catchy phrases.

And if you ask me what it means for corporate IT shops, I don't know that either. Yes, we have our part to play in tightening security, improving communications and preventing more attacks. But what it really means? You'll have to find that for yourself.

What I do know, from the endless discussions and dissections of the terrorists during the past year, is that those murdered thousands were killed by people who hate the modern world. They took control of our technology, using it as a weapon so destructive it could demolish skyscrapers. But they did it in the name of turning back the clock.

The ideas that are fundamental to the modern world — science, technology and most of all, information — were anathema to the killers. They weren't just trying to slaughter the people in the World Trade Center and the Pentagon. They wanted to destroy progress.

And that's what IT people are all about.

We believe in progress, and technology and information. We believe our job is to use technology and information to create value and benefit, and sometimes even good.

We believe new ideas and fresh approaches can be better than old ways and notions — at least sometimes. We know from long experience that the difference between a good new idea and a bad new idea can remain invisible to us until we try each of them, and sometimes until we try them again and again.

We don't believe technology is an unalloyed good. But we believe technology can be used to make individuals more powerful and organizations more effective. And we believe those who wield technology can use it for good.

We believe in information. We believe we can use technology to store and process it, but also to discover new information we didn't know, to see patterns we didn't recognize before.

We believe in communication. We believe it can bring people together to cooperate or compete. We know its risks: misunderstanding, conflict, fear. But we believe those risks are worth taking for the opportunity to exchange ideas with people we otherwise would never come to know.

We believe information and technology can bridge differences, level inequalities and offer opportunities. We believe they can be used to heal the sick, feed the hungry and make lives better, though they're not always used that way.

We believe in the new, the unfamiliar, the different. We accept the unexpected. We delight in coming to know what was unknown. We believe in complexity and confusion, and in overcoming them with simplicity and clarity and elegance — and, when necessary, the occasional ugly kludge.

Most of all, we believe in progress. We believe things can get better — not just that next year's computer or network or software will be faster, more powerful and more useful than this year's model, but also that over time, we and our companies, our industries, even our societies can be transformed.

We believe we can solve problems. We believe that once those problems are truly solved, there can be no going back. We believe in the future. We believe we can change the world.

These are the beliefs IT people share, no matter their nation or creed or culture.

I may not be able to tell you what Sept. 11 means. But I can say this: That faith in progress, technology and the future is about as far from the murderers of Sept. 11 as anyone can get. ◗

Laptops for Everyone!

This laptop is used by social workers for field interviews, so power-saving features are turned on, including the option to turn off the computer's cooling fan when it isn't needed. But it hangs sometimes, reports IT pilot fish. "I finally know what the problem is," user tells fish one day. "I was interviewing a man who told me he really knows a lot about computers. He showed me that the fan wasn't turning and told me the computer just needed a new fan belt."

Well, No...

User complains his new laptop won't hold a charge, and he's already replaced the battery once. Support pilot fish checks it at the user's desk. "The machine was so hot, we couldn't pick it up," fish says – it's plugged into the docking station *and* the travel power cord. User explains, "I figured it would charge the battery twice as fast."

Plenty of Packing

Help desk pilot fish instructs remote user to use plenty of packing material when shipping his laptop for repair. But when it arrives, the screen looks like it's been hit with a hammer. How was the laptop packed? "It was placed in the box with almost an entire ream of copier paper. Flat, uncrumpled copier paper," sighs fish. "Might as well have been a block of wood."

Right Question

Now remote hire can't dial to to get e-mail, and IT pilot fish is baffled. "We went through the network and dial-up settings, but nothing was like it was supposed to be," says fish. "Finally, after two hours, I ask him out of pure frustration, 'Is this the laptop that I sent you?' Dead silence – then he said, 'No...'"

Details, Details

Traveling user calls support pilot fish to complain that his remote access isn't working. Nothing fish tries fixes it, and user is getting irate. It takes several days before new adds one more detail to his complaint: "I forgot to mention that the laptop was damaged due to a fall of my suitcase at the airport."

Too Late!

Visiting VIP's laptop has an "I" key that won't work, and support pilot fish is asked to help. But he's too late. "I thought I'd save everything," says fish. "But VIP uses a screwdriver to remove screws from bottom of laptop – it's still running – flips it upright, pries out the keyboard, removes the cable, blows on the connectors, then puts it back together. It now works." Turns out VIP's own help desk knows about the problem and advises travelers to keep screwdrivers handy just in case.

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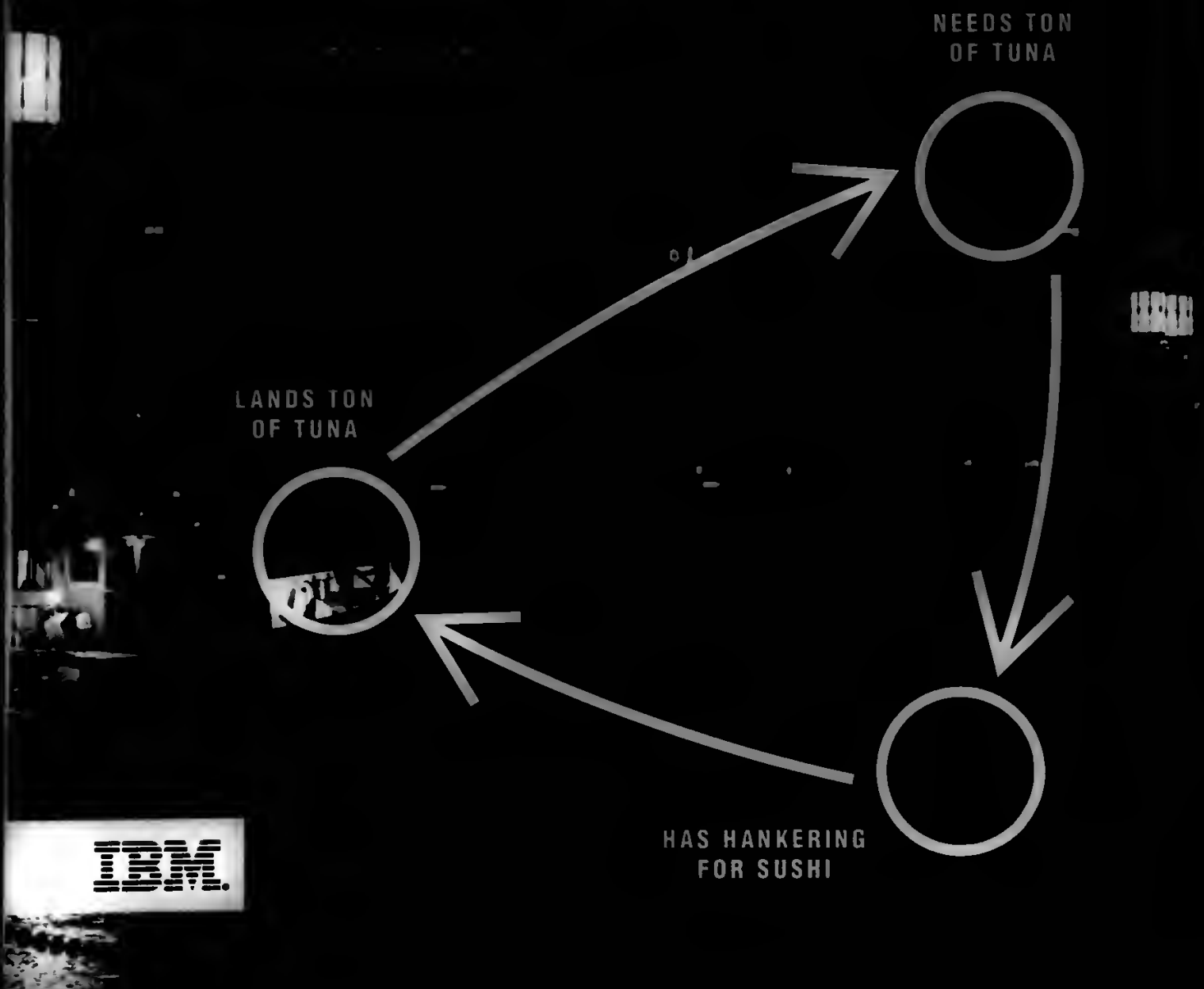

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